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'WEST BARBARY'

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OR

NOTES ON THE SYSTEM OF WORK AND WAGES IN THE CORNISH MINES

BY

L. L. PRICE, M.A.

FELLOW OF ORIEL COLLEGE, OXFORD; AUTHOR OF 'INDUSTRIAL PEACE'

London

HENRY FROWDE

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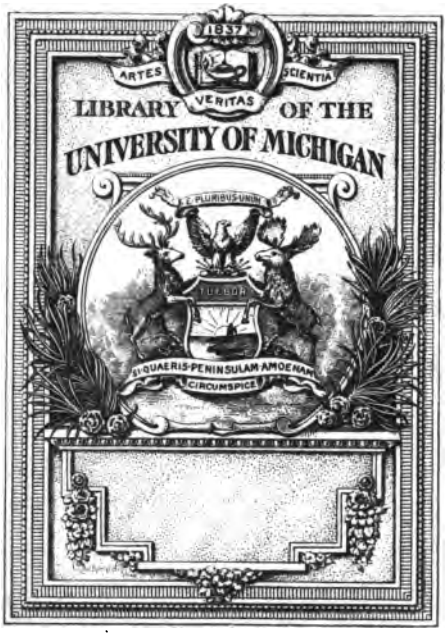
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'WEST BARBARY'

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OR

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Langford Lovell Frederic Rice

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TO THE MEMORY OF

MY MOTHER

TO WHOM, BEFORE HER SUDDEN DEATH

I DEDICATED

THE FOLLOWING PAGES

'But since it pleased a vanish'd eye,
I go to plant it on his tomb,
That if it can it there may bloom,
Or dying, there at least may die.'

TENNYSON'S *In Memoriam.*

PREFACE.

THE following pages contain the results of an inquiry made for the Toynbee Trustees in the years 1886–87. They are based, partly upon local information obtained during a residence in Cornwall in the latter months of 1886, and partly upon the evidence given before the Mines Commission of 1864, and a Select Committee of the House of Commons on the Stannaries Act (1869) Amendment Bill, which sat in 1887.

The Author desires to express his acknowledgments to friends in Cornwall for the readiness with which they furthered his efforts to obtain information, to the Council of the Royal Statistical Society for their permission to reprint in this form the notes, which originally appeared as a paper in their Journal (Vol. LI. part III), and to Professor Foxwell for his kindness in reading through the report in manuscript, and offering suggestions.

ORIEL COLLEGE, OXFORD,
25th March, 1891.

CONTENTS.

CHAPTER I.

Introduction: the Name of 'West Barbary.'

PAGE

Cornwall has sometimes been called 'West Barbary'; and the name may be partly explained by the 'air of antiquity' pervading the county 11

This antiquity is illustrated by the permanence, among other examples, of the system of Wages in the Mines 12

CHAPTER II.

The Permanence of the System of Wages in the Mines.

One reason for this permanence may be found in the remoteness and isolation of the district 15

This is illustrated by—

Its comparative lack of railway accommodation 15

Its long immunity from political agitation 16

And the antiquity of its mining industry 17

Not indeed of Copper, but of Tin 18

As the history of the Stannaries Court and Parliament proves . 19

Within recent years, however, changes have been at work, such as—

Bitter political contention 22

And extensive emigration 23

A second and more potent reason is to be found in the efficacy of the system itself—

For it is not peculiar to Cornwall 24

And Cornish emigration is not without a precedent . . . 25

And the system has lasted through the varied vicissitudes of Cornish mining 25

CHAPTER III.

The Nature of the System.

The system consists of two varieties—

Tutwork and 27

Tribute 31

CHAPTER IV.

The Origin of the System.

PAGE

Its origin is in all probability considerably remote; for the account given by M. Jars in 1765 33
(Which seems to refer to a period of transition 34
And to point to a yet earlier date for its original introduction) . 35
Shows that even then the peculiarly Cornish practice of 'ticketing' prevailed 36
And may be reconciled with statements contained in earlier authorities 37

CHAPTER V.

Its Subsequent History.

This may be traced in several authorities 39
But the most important change is indicated by two authors, who are in accord with—
Hints given in earlier authorities 41
Evidence furnished to the Mines Commission of 1864 . . . 42
And to a Committee of Parliament in 1887 46
And reports contained in recent issues of local newspapers . . 46
Although the system of Tutwork has encroached upon the system of Tribute, yet Tribute is not defunct, and the cause of the change will be shown later 47

CHAPTER VI.

Its Advantages.

These must be distinguished from the *extraneous* influence of Wesleyan Methodism 50
And are—
(1) The mitigation, if not prevention, of strife 50
(Which illustrates the characteristic feature of co-operative production—
The elimination of the Employer 51
And not of the Capitalist) 53
(2) The coincidence of the interests of the Men and the fortunes of the Mine 55
In consequence of which—
(*a*) The intelligence of the workmen is increased . . . 56
(Although this may be due partly to the diversified nature of their work 56
But chiefly to the system) 57
Which is speculative in character 58
And probably not very influential in encouraging thrift . 58
(*b*) And the maximum of output is secured 61

CHAPTER VII.

Disadvantages and Abuses.

Some of these are of a minor character 62
And the system cannot be held entirely responsible for the excessive mortality 63

PAGE
(Which has been largely due to the climbing of ladders) . . 66
Though it may indeed have been aggravated by the absentee ownership of the mines 68
Nor for the fraud—
(Which has been too common in Cornish mining 69
And may be connected with the identity of merchants and adventurers 70
And more intimately with the speculative nature of mining industry) 70
(Which may be illustrated by the corner of 1870–72 71
And the recent action of a French Syndicate) 71
Nor for the grievances attaching to royalties and mine-leases . . 73
But another abuse is related to the length of the intervals of payment; and the diminution of this length is connected with the other main change in the modern history of the system—the encroachment of Tutwork on Tribute 74

CHAPTER VIII.

A Comparison between Tutwork and Tribute.

The Tributers enjoy in the highest degree the advantages of the system; for they are more responsible and more interested 78
But they are also peculiarly exposed to its disadvantages, for their earnings are more irregular 78
The wages of Tutworkers fluctuate indeed 78
According to the nature of the work 78
Or the district 79
Or the time 81
And the different earnings of Tributers may result in an equal average wage 82
The tributers may also work in healthier parts of the mines . . . 83
But they often overwork 83
And their earnings, though generally higher 84
Are more irregular 85
The comparative decline of tribute may be ascribed partly to this irregularity 85
(And is *indirectly* connected with the decrease in the intervals of payment 85
And also *directly*, as the tribute-accounts cannot be made up so rapidly) 85
But it may also be ascribed to the growth of mining knowledge . . 87

CHAPTER IX.

Conclusion.

The new form of the system is not free from abuses and complaints . 88
And the intermediate 'kind of' Tribute has no distant connection with the simple form 89
But the reasons which have led to the encroachment of Tutwork are powerful 90
And other changes may be impending, about which it would be dangerous to prophesy 90

LIST OF TABLES.

PAGE

I.—A Tutwork 'Bal-bill' of the Devon Great Consols Mine for November, 1849 30
(Taken from 'Cornwall, its Mines and Miners,' p. 147.)

II.—A Tribute 'Bal-bill' of the Devon Great Consols Mine for August and September, 1849 31
(Taken from 'Cornwall, its Mines and Miners,' p. 147.)

III.—A Tutwork 'Bal-bill' of Carn Brea Mine for May, 1863 . . 44
(Taken, together with IV–VII, from 'Mines Commission Report,' Appendix B, xii.)

IV.—A Tribute 'Bal-bill' of Wheal Basset for October, 1863 . . 44

V.—A Tribute 'Bal-bill' of Dolcoath Mine for June 1842 . . 45

VI.—A Tutwork 'Bal-bill' of ,, ,, November 1863 . . 45

VII.—A Tutwork 'Bal-bill' of ,, ,, ,, . . 45

VIII.—A Table showing the Relative Amounts of 'Labour-cost' and 'Tribute' at Dolcoath exhibited by reports furnished to three-monthly meetings in 1885–86 48
(Based upon extracts from local newspapers.)

IX.—Average Annual Number of Deaths per 1,000 Cornish Miners, per 1,000 Northern Colliers, and per 1,000 Cornish Males in 1849–53 64
(Based upon tables in 'Mines Commission Report,' pp. x and xi.)

X.—Average Annual Number of Deaths per 1,000 Miners and Males from Pulmonary Diseases, 1860–62 65
(Extracted from 'Mines Commission Report,' p. xiii.)

XI.—Average Monthly Wage in three different districts in 1837 . 79
(Taken from *Statistical Journal*, vol. i, p. 78.)

XII.—Average Monthly Wage in four different Mines in 1864 (*circa*) . 80
(Based on 'Mines Commission Report.' *Q.* 7995.)

XIII.—Different Rates of Tribute in 1885–86 82
(Based on statements collected from local newspapers.)

A.—Percentages of Increase and Decrease in Population of Cornwall for Decennial Periods, 1801–81 23
(Taken from 'Census of England and Wales, 1881,' vol. iv, pp. 9, 48, and 82.)

B.—Amount of, and Profit on, Candles and Powder consumed in a Year in four Mines 59
(Extracted from 'Mines Commission Report,' Appendix B, xi, p. 436.)

'WEST BARBARY.'

CHAPTER I.

Introduction: the Name of 'West Barbary.'

'The first, last, and best county of England.'

In the biography of Samuel Drew, 'shoemaker and metaphysician,' as he has sometimes been styled, we are told[1] that, when he went to live at the Cornish town of St. Austell, 'the rude manners of the population which had led some to call Cornwall "West Barbary," were fast yielding to the benign influences of that Gospel, which had been so faithfully and zealously promulgated among its inhabitants by the Rev. John Wesley and his coadjutors.'

And yet, in spite of the 'benign influences' of the Wesleyan revival, which perhaps was nowhere more pronounced, and has in no other district been fraught with more abiding consequences, the name of 'West Barbary' still survives, and even to-day is playfully applied on some occasions, if not by strangers, at least by the Cornish themselves, to their bleak and rugged county. It is not, indeed, that any warrant for the name can now be found in the 'rude manners of the population;' for in this respect at least all accounts are unanimous in crediting the faithful and zealous labours of 'the Rev. John Wesley and his coadjutors' with the most remarkable and gratifying results. A writer, for instance, in Knight's 'Penny Magazine,' stated[2] in

[1] 'Samuel Drew, the Self-taught Cornishman,' 1861, p. 57.
[2] May 21st, 1836.

1836 that the 'improvement,' which had taken place in Cornwall during the 'last thirty years,' was 'striking,' and that 'Wesleyan Methodism' had undoubtedly 'had a share in producing this favourable state of things.' A writer in the 'London Quarterly' in 1862 maintained[3] that Wesleyan Methodism had been the 'chief agency' in effecting what might be described as a 'revolution in the moral and social condition of Cornwall.' John Wesley himself, as early as 1781, had remarked[4]:—'It pleased God the seed' there 'sown has since produced an abundant harvest.' 'Indeed,' he added, 'I hardly know any part of the three kingdoms where there has been a more general change.' And Mr. Wilkie Collins, writing in 1851, gave utterance to an opinion, which might be echoed by many a grateful tourist, when he declared[5] that the 'manners of the Cornish of all ranks down to the lowest' were 'remarkably distinguished by courtesy.'

But it is rather because in this extreme corner of England—'the farthest shire of England westwards,' as Carew termed it in his 'Survey of Cornwall'—we can detect more abundant and closer links with the past than elsewhere, and because in some respects at least the 'population' seems to have remained unaffected by modern changes, that the name can still be applied. 'It is impossible,' remarked[6] the Quarterly Reviewer in 1867, 'to spend even a few weeks in Cornwall without being impressed with the air of antiquity which pervades that county.' 'There is a continuity between the present and the past of that curious peninsula, such as we seldom find in any other place.' And hence it is that Cornwall has always been an attractive subject of study to the antiquarian,[7] be his researches architectural, linguistic, or legal; and that it presents no less interesting a field of inquiry to the economic antiquarian. The county abounds[8] with 'survivals' of the past; and among these the system by which the mines are worked is as interesting and remarkable as are the ancient Celtic cromlechs, the extraordinary jurisdiction of the

[3] XIX, pp. 1–42.

[4] 'Wesley's Works' (11th edition), vol. xiii, p. 297. Wesley visited Cornwall in 1743 and 1744.

[5] 'Rambles beyond Railways,' p. 67.

[6] 'Quarterly Review,' vol. 123, pp. 35, &c. *Cf.* also 'An Unsentimental Journey through Cornwall,' p. 13.

[7] It must be added that it has sometimes been the occasion of fanciful theories.

[8] The 'Quarterly Review' remarks that 'it has been truly said that Cornwall is poor in antiquities, but it is equally true that it is rich in antiquity.'

court of the Stannaries, and the few scanty traces which may still be found of the old Cornish language.[9]

The economic student, who is fresh from the perusal of that painful chapter of industrial history with which the last century closed and the present opened, and has traced the course of the sweeping revolution which was then effected in the methods of English industry, has seen how ancient landmarks were rudely removed, how new relations were substituted for old, and how, as one writer has put it, the word 'manufacturer' was made to 'forget its etymology,' and the mediaeval craftsman, who lived and worked together with his apprentices and journeymen, gave place to the modern 'master,' who employed hundreds of 'hands,' whose very faces he might not know, and to whose interests his own were linked by the unsympathetic bond of a 'cash-nexus,' might well be surprised to discover a district and an industry, which seem to have escaped the disturbing influences of the 'industrial revolution,' and to have preserved with unbroken continuity the same general system of wages from the middle of the last century, if not from a yet earlier date, down to the present day.

The social reformer, again, who has learnt to regard trades unions as one of the most powerful instruments for protecting the interests of the workmen, and yet at the same time as perhaps the most certain guarantee which is now available for the preservation of industrial peace, might well be astonished to find a district and an industry where strikes are said[10] to be 'unknown,' and 'no combinations or unions' exist.[11]

And lastly, the veteran co-operator, who has for years been persistently urging the extension of the principles, which have proved so successful in the distribution or consumption of wealth,

[9] Dolly Pentreath, who is stated to have been the last person who could talk in Cornish, died at Newlyn, near Penzance, in 1778; but fragments of the language are said still to live in the memory, *e.g.* the numerals, and portions of the Lord's Prayer and the Creeds.—'Leisure Hour,' 1879, pp. 167, &c.; 'Quarterly Review,' vol. 123, p. 40.

[10] 'Penny Magazine,' 27th December, 1834.

[11] S., Q. 5728. *Cf. contra*, 'Mining Journal,' 11th January, 19th April, and 24th May, 1879, for strike at Devon Great Consols Mine, and below. As frequent reference will be made to two parliamentary papers, I shall, for the sake of abbreviating the notes, refer to the Report (1887) of a Select Committee of the House of Commons on the Stannaries Act (1869) Amendment Bill by the letter S, and to the Report (1864) of the Commissioners 'appointed to inquire into the condition of all Mines in Great Britain to which the provisions of the Act 23 and 24 Vict., cap. 151, do not apply,' by the letter K.

to its production, and has met with little else save disappointment, if not failure, in practice, and—by a still more cruel dispensation of fate—with discouragement and dissension among his own brethren,[12] might well marvel to hear of a district and an industry where societies for co-operative distribution may be said without undue exaggeration to be practically non-existent, while the system of wages in the mines may be described without any great straining of language as a species of co-operative production.[13]

[12] *Cf.* address of Mr. T. Hughes at the co-operative congress held at Carlisle in 1888.

[13] *Cf.* below, chapter vi.

CHAPTER II.

The Permanence of the System of Wages in the Mines.

A partial explanation of the apparent enigma we have just noticed is undoubtedly to be found in the remoteness and separate character of the district. 'There is no county in England with a stronger individuality than Cornwall,' remarks[1] the author of 'John Halifax, Gentleman.' And there is a story,[2] which may indeed be fabulous, but is nevertheless current, to the effect that in an old geography book of the reign of Queen Elizabeth the entry may be found: 'Cornwall: a foreign country on that side of England next to Spain.' At any rate a writer in 'Chambers' Journal' once described[3] it as 'one of the most un-English of English counties;' and to illustrate and justify this description the same writer pointed out that it was 'the last region into which the railway engine penetrated.' And yet—curiously enough—the county enjoys a historic connection with the engine, for Richard Trevithick, who is said by some to have been, together with his fellow townsman Andrew Vivian, the first to demonstrate the practical utility of the locomotive,[4] was a 'captain' in a Cornish mine; and at a still earlier time[5] the Vicar of the Cornish town of Redruth is credited with the fame of having identified the engine invented by Murdoch, as it came rumbling along the country road, pouring forth smoke, steam, and sparks, and casting a ruddy light across the darkness, with his Satanic Majesty himself.[6]

[1] 'Good Words,' 1st January, 1867.

[2] 'Leisure Hour,' 1879, pp. 167, &c.

[3] 17th February, 1861.

[4] He first applied high pressure steam to locomotives.

[5] *I.e.* in 1784. *Cf.* 'Life of Richard Trevithick,' by F. Trevithick, p. 147.

[6] Richard Trevithick's engine, which was called the 'Camborne Common Road Locomotive,' received also the local nickname of the 'puffing devil.' *Cf.* 'Cornish Worthies,' by G. W. H. Tregellas, vol. ii, p. 319.

But, despite of this, Mr. Wilkie Collins, writing about Cornwall in 1851, entitled his book 'Rambles beyond Railways,' and, although the title was speedily contradicted[7] by railway extension, even to-day the district has not by any means entirely forfeited its early character. Partly no doubt in consequence of the difficulties, which the frequent alternations of hill and valley present to the railway engineer, and partly also—if we may believe some accounts[8]—in consequence of the bitter contests, which were carried on between the partisans of the broad and the narrow gauge at the time when the extension of railways into Cornwall was first contemplated, the traffic is still conveyed on a single line, and the trains are comparatively few in number and limited in speed. It is natural, then, that in such a district as this old customs and notions should survive, that even unreasoning superstition should stubbornly linger,[9] and that new ideas should make their way with comparative slowness.

And this conclusion derives support from other significant facts. The writer in the 'Quarterly,' to whom we have just alluded, stated that, in spite of the heated quarrels attending the early railway history of their county, the Cornish were 'comparatively indifferent to *political*[10] agitation,' and took 'little share in public movements;' and he said that this isolation of Cornwall was partly due to its 'geographical position.' In this respect again the county has only recently departed from its former traditions. In the district comprising the new parliamentary division of Camborne, which is familiarly known as the 'Mining Division,' a political contest is said[11] not to have taken place for half a century before 1885, and the then member had retained his seat undisturbed for a period of some seventeen years.

It is, we must remember, the mining district which has especially preserved this local and individual character. The eastern part of the county[12] seems to have been more easily susceptible to external influences, and the single words and phrases which still survive of the Cornish language are said to be

[7] *Cf.* Preface to 2nd edit. (1861), p. ix.

[8] 'Quarterly Review,' vol. 102 (1857), pp. 289-329.

[9] Especially among the miners. *Cf.* 'Leisure Hour,' 1879, pp. 171, &c.; 1883, pp. 731, &c.

[10] The italics are my own. Cornwall, it is to be noticed, was conspicuous for its 'rotten boroughs.' *Cf.* 'Leisure Hour,' 1879, pp. 171, &c.

[11] *Cf.* statements reported in the 'West Briton,' 10th September, 1885, during the general election.

[12] There are also, it should be mentioned, a few tin mines in East Cornwall; but they are less important, and the tin-mining district, *par excellence*, is undoubtedly West Cornwall.

found almost exclusively in West Cornwall. Nor is it without significance in this connection that the comparative decline—to which we shall call attention later—in the prevalence of perhaps the most distinctive feature of the Cornish system—the payment of 'tribute' as it is called—has been more marked in the mines of East than of West Cornwall,[13] and that the most permanent home of that peculiarly Cornish 'cost-book' principle, to which we shall presently allude, has been the western part of the county.[14] In considering, then, the causes which have contributed to preserve the system of wages in the mines, we must pay some regard on the one hand to the separate nature of the county, and especially of the mining district, and on the other to the antiquity and distinctive character of the mines themselves.

Whether it be true[15] or not that the Cassiterides, from which, according to Herodotus, tin was obtained, were identical with the west of Cornwall, or whether they were mistaken for it, it is at any rate probable that the Quarterly Reviewer, from whom we have previously quoted, is scarcely guilty of exaggeration when he maintains that the 'industry of our ports, our manufacturing provinces, our coal districts, almost that of London itself, are mere products of recent ages, compared with the trade of the Cornish tinners.' It is at least certain that the language of Carew, when he says that the 'tynne' of Cornwall—the 'little angle,' as he calls it—'overfloweth England, watereth Christendom, and is derived to a great part of the world besides,' might be applied with some deductions to a far earlier period than that at which he wrote.

It is true, indeed, that the mines do not seem to have been worked for copper until a comparatively recent date. A report[16] on the condition of the Cornish mines presented to the House of Commons in 1799 stated that it was not 'until the latter end' of the previous century 'that copper ore was first discovered in Great Britain;' but the report went on to remark that 'that was in working the tin mines of Cornwall which had been wrought time immemorial.' Borlase, again, whose book was published in 1758, but who probably wrote at an earlier date, maintained that 'the application of the Cornish to work the copper mines' was 'not so

[13] S., *Q.* 1338.

[14] S., *Q.* 19 and 20.

[15] *Cf.* 'Underground Life; or, Mines and Miners,' by L. Simonin, translated and revised by H. W. Bristow, 1869, p. 280. *Cf.* also 'Good Words,' 1st February, 1867, pp. 126, &c., and 'British Mining,' by R. Hunt (2nd edition), chapter i.

[16] These statements are taken from an article by Sir Charles Lemon, contained in the *Journal of the Statistical Society*, vol. i, 1838, pp. 65–84.

old as the generation' then living. And Carne, summing up the question in the 'Geological Transactions of Cornwall,' argues that 'on the whole it appears probable that previous to A.D. 1700 the copper ore produced in Cornwall was principally, if not wholly, from the tin mines, or at least from mines originally worked for tin; and although it is by no means correct that it was not till the latter end of the seventeenth century, that copper ore was first discovered in Great Britain, as was stated to a committee of the House of Commons in 1799, yet that appears to have been the period when mines were first set at work purposely for copper.'

But attention has been drawn by M. Simonin,[17] among others, to the 'remarkable manner' in which 'tin alternates with copper in the Cornish mines;' and Pryce in his 'Mineralogia Cornubiensis,' which was published by subscription in 1778, points out[18] that copper is usually more remote from the surface than tin, and is consequently discovered at a later period. Of recent years again the amount of copper produced in Great Britain has declined, partly indeed in consequence of the opening, and cheaper working, of American, Spanish, and other foreign ores, but partly also because the Cornish mines, which once yielded copper, have now once more developed deposits of tin. To such an extent, indeed, has this been the case that a local newspaper, reviewing the events of the year 1886, stated[19] that copper mining was 'almost' a 'past industry' in Cornwall; and the sales of copper ore, which once took place at Redruth, were said in another issue of the same newspaper to have been abandoned. It is tin, therefore, which occupies the largest space in the history of the Cornish mines; and it is to the systems attending the production of tin that we must look in the main for the origin of the peculiar traditions of Cornish miners.

The tin mines of Cornwall, as the report made to the House of Commons in 1799 stated, have been 'wrought time immemorial;' and in the antiquity of the trade itself it is hardly fanciful to say that we may detect a reason for the long continuance of the system of wages. For this very antiquity gave a separate and

[17] 'Underground Life,' p. 304. Thus the famous Botallack mine was worked as a tin mine from 1721 at least, and about 1816 it was considered to be one of the most productive tin mines. In 1841 it was about to be abandoned, but a rich copper lode was discovered, while now it is once more worked for tin. *Cf.* Tregellas' 'Guide to Cornwall,' pp. 29 and 30.

[18] Introduction, p. vii.

[19] 'Western Morning News,' 3rd and 31st December, 1886. The sales were still continued at Truro.

distinctive character to the workers in the trade; and—to devote some attention to a point which is perhaps the most striking illustration of this distinctive character—the Cornish miners, like the lead miners of the Derbyshire Peak, enjoy the privilege of being under extraordinary legal jurisdiction.

The origin of the mining laws in Cornwall is said[20] indeed by a writer in the 'Penny Magazine' to date back to a time considerably anterior to the Norman conquest. And, although we may not give credence to this tradition, and may hold that, if we did, it would be as little possible to obtain any accurate idea of the details of these laws as it would be to discover the relation in which the Phœnicians may have stood to the management of the mines, or the nature of the system according to which at a subsequent period the Romans may have employed the labour of the Britons, or the character of the bargains by which, at a still later time, the mines may have been leased by King John to the Jews,[21] yet it seems to be beyond doubt that the privileges, which are said to have been secured by a few Cornish gentlemen during the disturbances in the reigns of the monarchs who succeeded this sovereign, were confirmed by a charter of the 33rd year of Edward I.[22] The right of working the tin had probably been vested in the Norman sovereigns as Earls of Cornwall, and the privileges of establishing a separate court of judicature and a 'kind of parliament,' of collecting for the lords a toll of one-fifteenth[23] of the tin produced, and of prescribing conditions with regard to mining boundaries, were probably conceded in return for a payment of 4*s.* per cwt.[24] to the Earl of Cornwall. In the 33rd year then of Edward I this charter was granted, and subsequent enactments were passed in the reigns of succeeding sovereigns. In the reign of Henry VII, indeed, the charter was forfeited for a time on account of 'irregularities' in the conduct of the tinners; but it was restored on their submission, and the restoration was accompanied by the grant of the additional privilege that *no* law relating to the tinners should be enacted without the consent of twenty-four gentlemen tinners, who were to be chosen by a mayor and council in each of the 'Stannary'[25]

[20] 16th December, 1843.

[21] *Cf.* 'British Mining,' chapters i–iii.

[22] *Cf.* Stephen's 'Commentaries on the Laws of England,' 10th edit., vol. iii, book v, chap. iv, sec. 7.

[23] The origin of the 'royalties.'

[24] This was abolished in 1838, *cf. Statistical Journal*, vol. ii, p. 268.

[25] The court and the district over which its jurisdiction extended received the appellation of 'stannary,' from 'stannum,' the Latin word for tin.

divisions. This charter was confirmed by Elizabeth, and thus the tinners definitely secured both a court and a parliament.

They were divided into four districts, with the capital towns of Helston, Launceston, Lostwithiel, and Truro. In each of these districts a 'steward' was appointed, who held a court every three weeks, and, together with a jury of six persons, tried and decided cases. From this court an appeal lay to the vice-warden of the Stannaries, who himself held a court every month and was chosen by the lord warden. From the decision of the vice-warden, again, appeal lay to the lord warden, and thence to the earl, or, as he is now called, Duke of Cornwall.

The Parliament, which was legislative and executive, consisted of twenty-four 'stannators.' When any difficulty arose with regard to the interpretation of an old, or the enactment of a new, stannary custom, the lord warden, by command from the Duke of Cornwall or the Crown, issued precepts to the four towns of the stannary districts. Each town selected six members, and occasionally in cases of importance the assembled 'stannators,' who were gentlemen of property in the district, and sixteen of whom constituted a binding majority, chose for each district six assistant-stannators, who were connected with the practical working of the mines, and formed a lower house of assembly.

The meetings of this parliament were however very rare, and none is said to have taken place for a century or more. But the stannaries court has still its regular sittings. The separate courts of the different districts have been united into one; the jurisdiction of this court has been extended to the mines in Devonshire, which formerly had a distinctive court of their own, and to copper and other metals and non-metallic minerals found in the mines within the stannaries; and the procedure has been amended by the Stannaries Act of 1869, and by subsequent measures of the years 1873 and 1876.[26] The sittings of the court are held periodically[27] at Truro—usually in the months of February, May, August, and November—and last for two weeks; but the vice-warden also

[26] *Cf.* Bainbridge's 'Law of Mines and Minerals,' 4th edit., by A. Brown, 1878, chap. vi, secs. 2 and 5.

The court, which is described by a witness before a committee of the House of Commons in 1887 as the 'cheapest court in England, so far as its original jurisdiction is concerned,' has been supported by a tax of a farthing in the pound levied 'upon all ore actually sold arising in the stannaries,' and by the sum of £1,000, which has been annually remitted by the Prince of Wales as a contribution towards its expenses. On paper the appeal from the vice-warden still 'lies to the warden,' who refers the question, as a matter of course, to 'the Lords Justices.' (*Cf.* S., *Q.* 44, 45, 102, 107, 113, and 184.)

[27] S., *Q.* 4440.

sits elsewhere at intermediate times to hear petitions for the 'winding up' of companies. The court is chiefly employed[28] for arranging the calls made upon the 'adventurers'—as the shareholders in the Cornish mines are styled—and for determining the liabilities of partnership under the so-called 'cost-book'[29] system. But the ancient privilege, by which all 'tinners' and 'labourers' 'in and about the stannaries' can claim during the time of their 'working in the stannaries' to 'sue and be sued' in their own court 'in all matters arising within the stannaries,' excepting 'pleas of land, life and member,' in order that they 'may not be drawn from their business which is highly profitable to the public' by attending their law suits in other courts, is by no means defunct; and a local newspaper of the 26th of November,

[28] *Cf.* S., *Q.* 4720 and 4721.

[29] The system is said by a witness before a committee of the House of Commons in 1887 to have been in existence for a 'very long series of years, certainly for nearly 300 years.' (*Cf.* S., *Q.* 4.) 'Up to' 'the Company's Act of 1862,' he stated, 'every' Cornish mine was conducted on this basis, and even now 'all the great mines in Cornwall' are worked under the same peculiar system. It is true that since 1862 many mines have been based upon the 'limited liability principle;' but a large number of these, it seems, 'have been failures.' (*Q.* 19.)

The essential features of the system are described by the same witness as consisting of:—

(1) *The Monthly Principle.* All the accounts are to be 'kept by the month,' 'everything is to be charged every month' in the 'cost-book,' and the adventurers themselves are to hold monthly meetings (*Q.* 4). This indeed may have been the origin of that monthly payment of wages to which we shall afterwards allude (*Q.* 13); and even now the 'costs are regularly made up every month,' although the actual meetings are generally held at intervals of three or four months (or sixteen weeks). This is done in order to meet the convenience of the adventurers, who have grown in number from eight to many multiples of that figure or more, and who, instead of living as they once did in the same parish, or county, or district as the mine, are 'scattered all over England' (*Q.* 17). It should be added that the theoretical basis of the system is the principle of cash *versus* credit; that technically the cost-book companies should not borrow (*Q.* 4563), although as a matter of fact they are from time to time largely indebted to the bankers (*Q.* 4600); and that no capital should be advanced at the outset (*Q.* 161).

(2) *The right to relinquish a share* at the end of a month on payment of all costs or calls due to date, and either to transfer the share to an outsider, or to compel the other adventurers to buy out the retiring adventurer's interest in the mine and its machinery (*Q.* 4, 8, 14, and 17). It has been suggested that the footing on which the interest should be valued should be, not as formerly, that of 'a going,' but that of a 'selling' concern (*Q.* 71); and that the remaining adventurers should enjoy the option of winding up the mine within a limited period after the relinquishment. For they themselves may be non-resident, while a resident adventurer or adventurers may contrive to get out of the undertaking when they see that it is on the point of failure (*Q.* 72). The Stannaries Act of 1887 provides for these two objects.

1885, contained a notice of an application made to the court by a Cornishman, who had gone to America, which apparently was only refused because the jurisdiction of the vice-warden did not extend beyond the limits of the stannaries.[30] The militia, again, of the stannaries is not regulated by the general militia law, but by a special enactment.[31]

We have drawn attention to the history of the stannaries court, not only because it supplies perhaps the most striking evidence[32] of the antiquity of the mines, and of the distinctive local character which is connected with that antiquity, but also because the permanence of the jurisdiction of the vice-warden is some indication that the influences, which are tending to lessen the isolation of the district, may not be powerful enough to effect a complete change—though they may produce alterations of detail—in the nature of the system under which the mines are worked, if it can be shown that that system rests on a basis of economic reason as well as of long tradition.

For there can be no doubt that within recent years there have been influences at work which must tend to lessen this isolation. The tranquillity—if we do not call it lethargy—which had before prevailed in the political sphere, has given way to an activity and enthusiasm accompanying the most embittered of contests; and it has been indisputably shown that the writer in the 'Quarterly,' from whom we have previously quoted, was not entirely mistaken when he remarked—in a different connection than politics—that 'never was a small people more curiously and readily divisible into factions.' For the contest between Whig and Radical in 1885 was even more intense and bitter[33] than, we imagine, can have been that which was waged between the partisans of the broad and narrow gauge.[34] There have been, too, the signs[35] of an agitation among the miners, which may not im-

[30] The court has a 'general equitable jurisdiction' in all disputes. *Cf.* S., *Q.* 168 and 1049.

[31] *I. e.*, 42 Geo. III, cap. 72.

[32] Pryce speaks of 'the privileges, immunities, and stannary laws whereby they' (*i. e.*, the Cornish miners) 'are distinguished, supported, and protected as a separate body of people,' p. ix. It must of course be allowed that *legal* institutions are peculiarly permanent.

[33] *Cf.* S., *Q.* 5815.

[34] This is the 'different connection' mentioned above.

[35] *Cf.* 'Western Morning News,' 4th November, 1886. 'Young Radical miners are discussing the formation of a miners' union, but older and more experienced men are not eager for it.' *Cf.* also S., *Q.* 2293-97.

Some years ago indeed, when an agitation was fermenting on the question of the 'four weeks' month'—as it is termed—an attempt was made in East

possibly result in the formation of an union; and for some years a stream of emigration has been flowing from the district, which must have its consequences.

It is not too much to say that figures may be adduced which tend to show that between the census of 1871 and that of 1881 a third of the mining population of Cornwall left the county. The registrar-general states in his general report[36] on the census of 1881 that the population of Cornwall decreased by 8·9 per cent. during the previous decade, and that it is probable that the tin miners diminished by 34 per cent.;[37] and he notices the corroborative fact that during the same period the Board of Trade returns exhibit a decrease of 21 per cent. in the production of tin in the United Kingdom. A witness before the Royal Commission on the Housing of the Working Classes in 1884 spoke[38] to a similar effect of the 'constant emigration' from the county; and a special correspondent of the 'Daily News,' who visited the 'mining division' in 1885, maintained[39] that it was 'no exaggeration to say that there' was 'hardly a family in the locality some of the members or intimates of which' were 'not pushing their fortunes in Australia or the New World.' These emigrants, who apparently make the Canadian and American mines their chief destination,[40] are continually returning to take out their

Cornwall and Devonshire to form a miners' union. This was to bear the name of a Miners' Mutual Benefit Association, and to lay down rules providing, amongst other things, for the appointment of a committee of the men in every mine. To this committee reference might be made by any miner dissatisfied with the price offered by the captain for a particular piece of work. But even this association professed to exclude strikes from its programme, and was successfully met by the adventurers with a 'lock-out' of 'society men;' and thus both the dispute and the society came to a speedy end. (*Cf.* S., *Q.* 1092, and also 'Cornish Telegraph,' 21st February, and 'West Briton,' 2nd, 9th, 16th, 23rd, and 30th March, 1866.)

[36] *Cf.* 'Census of England and Wales,' 1881, vol. iv, General Report, pp. 8 and 48.

[37] *I. e.* from 15543 to 10253.

The increase and decrease in the population of Cornwall for decennial periods since 1801 is given thus:—

TABLE A.

1801–11.	1811–21.	1821–31.	1831–41.	1841–51.	1851–61.	1861–71.	1871–81.
+14 p. cnt.	+18	+16	+13	+3	+3	−2	−9

[38] *Q.* 8151.

[39] 'Daily News,' 21st September, 1885; and also 'Leisure Hour,' 1879, pp. 167, &c.

[40] *Q.* 8152.

wives, their families, and their friends;[41] and indeed this is one of the most pleasing traits in the miner's character.[42] And hence it is that a journey to America appears to be scarcely more formidable than a journey to London, that letters from Cornishmen in America were published among the miners during the electoral contest of 1885, and that a paper,[43] which circulates very extensively in the district, may be fairly described as American in character.

As the result of these combined causes there is little doubt that new ideas unknown before are spreading amongst the miners, and that the foundation, which may have existed for the system of wages we are going to examine in the isolation of the district, is being undermined. Were this then the only basis of the system, we might expect to hear of its early disappearance. But the acceptance of this conclusion would imply acquiescence in a narrow and misleading view. The permanence of the system cannot be attributed to the isolation of the district alone, but must also be traced to another and perhaps more potent cause.

For, although Cornwall seems, as far as can be ascertained, to be the birthplace of the system, yet it has been introduced—with some differences—into other districts, and has there met with equal success, and shown promise of equal longevity. Mr. John Taylor, who is said to have been himself instrumental in promoting its introduction into Flintshire, Cardigan, Cumberland, Yorkshire, and Ireland,[44] described it in 1814 in a paper inserted in the 'Transactions of the Geological Society'[45] as 'the peculiar system invented and gradually improved to its present state in the mines of Cornwall, and more recently adopted in the undertakings of the same kind in the adjoining county.' But a royal commission, which was appointed in 1864 to inquire 'into the condition of all mines to which the provisions of the Act 23 and 24 Vict., cap. 151, do not apply,' found similar customs prevailing[46] so far away as the lead mines of the north; and in one of

[41] Q. 8158. *Cf.* also 'Daily News,' 14th January, 1879.

[42] It must, however, be said that cases also occur where the poor law guardians discover that the emigrants have found it convenient to forget their families.

[43] *I. e.*, the 'Redruth Independent.'

[44] *Cf.* 'Penny Magazine,' 4th November, 1843. In the north apparently there is no public auction. (*Cf.* infra chapter ix, and K., Q. 13631.)

[45] 'Geological Society's Transactions,' vol. ii, sec. 14, 1814, p. 310.

[46] K., Q. 13475-79, 13910-3, 14404-12, 14915-21, 14929, 15473, and 17369. The Yorkshire 'bing tale' and 'fathom tale' correspond respectively to

these places the system of wages was declared[47] to have been in operation for the previous half century. It was indeed said[48] by a witness before a committee of the House of Commons in 1887 'to have been almost universally adopted in all the mines which are worked upon lodes;' and we may accept this statement as approximately correct in view of the fact that the Spanish mines of Limares[49]—in common with mines in other parts of the globe—are apparently managed by Cornish captains.

Nor is the emigration of Cornishmen an entirely modern phenomenon; for Mr. Wilkie Collins stated[50] in 1851 that 'emigration' had 'been more largely resorted to in that county than perhaps in any other in England,' and that 'out of the population of the Penzance Union alone nearly five per cent. left' 'for Australia or New Zealand in 1849.' The Quarterly Reviewer, again, in 1857 described[51] the Cornishman as 'one of the most locomotive of mankind.' 'Emigration,' he remarked, had 'been so large of late years as to keep the population stationary, notwithstanding a flourishing state of domestic industry.' About the year 1827, indeed, it is curious to note that an actual foreshadowing of the present emigration to America occurred; for an article inserted in that year in the same 'Review,'[52] and directed against speculation in Mexican and South American mines, shows how Cornish miners were taken across the ocean to work these mines, although, as the writer remarks, they were acquainted with copper and tin rather than silver.

But a more cogent argument for the permanence of the system may be found in the fact that during its recorded existence Cornish mining has passed through the most varied vicissitudes, and has, as we have noticed, at one time yielded copper and at another tin. Carew's suggestive language, indeed, might be applied to a large part of the history of Cornish mining. 'But,' he quaintly remarks, 'you may not conceive that everie likelihood doth ever produce a certaintie, for divers have been hindered through bestowing charges in seeking and not finding, and many undone in finding, and not speeding whiles a faire show tempting

the Cornish 'tribute' and 'tutwork.' Appendix B vii, p. 322. S., *Q.* 246 and 247.

[47] *Cf.* K., *Q.* 16195. [48] S., *Q.* 217. [49] S.. *Q.* 295.

[50] 'Rambles beyond Railways,' p. 57. This efflux was apparently due to the potato blight. There was very extensive emigration in 1867, owing to depression in the mining industry. *Cf.* 'Mining Journal,' 16th November, 1867; 'West Briton,' 4th January, 1867.

[51] Vol. 102, pp. 289-329.

[52] Vol. 36, pp. 81-106.

them to much cost hath in the end fayled in substance, and made the adventurers bankrupts of their hope and purse.' We are led, then, to seek for another cause for the permanence of the system, and that cause is to be found, as we shall endeavour to show, in the reasonableness and the efficacy of the system itself.

CHAPTER III.

The Nature of the System.

Some forty or fifty years ago descriptions[1] of the Cornish miner and his habits, and system of work and wages, were a familiar topic on the pages of such periodicals as Knight's 'Penny Magazine.' And, even so late as 1861, a writer in the 'Dublin University Magazine' declared[2] that the 'character and habits' of the Cornish miner had been 'described times out of number.' But of recent years the attention of the public has been drawn in other directions; and it may therefore be well to give a brief description of the system of work before we attempt to trace its history, or to discuss its advantages and its drawbacks. The description will be more serviceable for our purpose, if we select a period when the system had become—to use the phrase with some qualification—*stereotyped* in its main features. And, although this course may appear somewhat arbitrary, it will nevertheless bring our description into accord with the common account given in most of the authorities to which we shall have occasion to refer, and will also throw into the boldest relief the main characteristic features of the system itself.

The Cornish miner's year, then, is divided into different periods; and at the end of every such period a 'setting-day,' as it is called, occurs. Some time before this day the agents, or 'captains,' as

[1] *Cf.* for descriptions of the Cornish miner, the following accounts amongst others:—

(1) 'Geological Society's Transactions,' vol. ii, 1814, sec. 14. (2) 'Quarterly Review,' vol. 36, 1827, pp. 81–106. (3) 'Penny Magazine,' 27th December, 1834; 21st May, 1836; 4th November, 1843. (4) *Statistical Journal*, vol. i, 1838, pp. 65–84. (5) 'Economy of Machinery and Manufactures,' by C. Babbage, 4th edit., 1835 and 1846, chap. xxvi, secs. 306 and 307. (6) 'Cornwall: its Mines and Miners' (Traveller's Library, No. 74), 1855. (7) 'Dublin University Magazine,' vol. 58, July, 1861, pp. 32–45. (8) 'Report of Mines Commission,' 1864, pp. xxii and xxiii.

[2] *Cf.* article quoted above (7).

they are termed, go through the mine, and decide what work is to be done in the succeeding period. They determine, for instance, on the one hand the work which must be executed, not directly for the purpose of obtaining the ore, but indirectly with the object of preparing the way. They decide what 'shafts' must be sunk, what 'levels'[3] must be 'driven,'[4] and what 'winzes'[5] must be made. And this work of preparation is continually going on, for a mine is not held to be prospering, if it is not being 'opened out' in this way. On the other hand they determine how many 'pitches,'[6] or divisions of the lode, are to be worked or 'stoped.' They estimate the quantity and the quality of the ore which these pitches are likely to yield, and the amount of labour which must be devoted to the work. And in a similar manner they decide upon the amount of labour which can be done in a given time in the work of preparing the way for the extraction of the ore, and determine, for example, the quality of the ground through which the shafts or winzes are to be sunk, or the levels driven.

On the setting-day the men employed in the mine, together with those who have come from other places desirous of work, assemble round the 'account-house,' or, it may be, a platform, where the chief agent or 'captain'[7] takes his stand. The proceedings begin with the reading of the rules and conditions under which the work of the mine is conducted; and these 'rules' are termed the 'general article.'[8] Then follows a public auction, or 'survey,' as it is called. The captain states that a certain amount of work is to be done in some part of the mine for the purpose of preparing the way, that a 'shaft,' for instance, is to be 'sunk,' or a 'level driven.' He says that part of this work was let to (say) John Thomas and his 'pare' for the previous period at so many

[3] A 'level' = a horizontal gallery at right angles to the shafts.

[4] Driven = made.

[5] A 'winze' = a shaft sunk from one level to another for purposes of ventilation.

[6] A 'pitch' is a division or compartment marked out in the lode, the ore contained within which may be extracted by one body of miners.

[7] There is usually more than one 'captain' in a Cornish mine: for instance, there are 'underground captains,' and there are 'grass captains,' who superintend the work of 'dressing' the ore, &c., on the surface, and there is the 'chief captain.' The title may perhaps have been taken from the mines in Saxony, where military discipline and uniform prevailed, for Queen Elizabeth is said to have introduced a number of German miners into England about 1570, to inspire and instruct the British miners. *Cf.* Hunt's 'British Mining,' p. 52, S., *Q.* 268, and Dr. C. Le Neve Foster's evidence, given in 1879, before the Accidents in Mines Commission (*cf.* Preliminary Report, 1881, *Q.* 4099 and 4243).

[8] This is not always read now.

shillings a lineal or cubic fathom; and he asks if John Thomas is willing to take the work on these terms for the succeeding period. John Thomas, who is called a 'taker,' and who represents a body of two to eight men or boys, who work together and constitute a 'pare' or 'pair,' as it is somewhat inconsistently styled,[9] perhaps replies that he is willing to accept the proffered terms. The captain then inquires whether anyone will do the work for less, and, so to say, puts it up to auction; and the bidding proceeds downwards according to the practice pursued in a 'Dutch' auction. If no one is willing to take it for less, the work is 'knocked down' to John Thomas; but, if anyone is willing, it is given to the lowest bidder. The bidding is closed, not by the auctioneer's hammer, but by a pebble; this is thrown into the air by the captain, and bids may be made before it reaches the ground; but, when once it has done so, the last bidder is considered to have secured the bid. The bidding, however, is seldom carried to so low a point as the captain considers to be a fair equivalent for the work, and consequently the auction merely determines the order of option. For the captain generally declares that he has a 'reserve price,' and thinks that the work can be done for less than has been offered; and he proceeds to ask John Thomas, or the man who has obtained the priority of option, whether he is willing to accept these lower terms. Should he accept, the bargain is concluded; and, should he not, it is offered to the man to whom the auction assigned the second choice; and so on until some one is found to be willing; or, should this not be the case, the letting of this part of the work is postponed until the next 'setting-day.' Should however the bargain be concluded, the men go to work. They are charged for all the materials they use, whether in the shape of tools, of candles, or powder, &c., and for the cost of hauling the rubbish to the surface. At the end of the period for which the contract is let a balance-sheet is prepared; they are credited with the amount of work they have done, and debited with its cost, and frequently also with a subscription for medical attendance,[10] and for the maintenance of a club,[11] which supplies

[9] A local term, *cf.* below, note 6 (chapter vi.).

[10] The Mines Commission (1864) alludes to dissatisfaction felt by the men because the doctor was chosen by the adventurers. (Report, p. xxiv.) He now seems in some cases to be chosen by the men. S., Q. 1736 and 1943.

[11] The club payment varied (1864) from 6*d.* to 9*d.* per head per month. (K., p. xxiv.). These clubs, it must be remembered, 'provide against accidents, and in some cases provide burial expenses;' but they 'do not give maintenance in case of sickness or old age, and often are unable to provide against permanent disablement.' *Cf.* S., Q. 5249-51 and p. xv.

them or their families with help in case they may have sustained 'visible hurts.'

The Royal Commission of 1864 stated that 'considerable deductions'[12] were made in this way from the 'nominal earnings' of the men, and, to illustrate this by an actual example, we may select a case recorded[13] in a book entitled 'Cornwall, its Mines and Miners.' The instance is taken from the 'bal-bills,' as the paying-bills are termed,[14] of the Devon Great Consols Mine, which was at one time one of the most prosperous enterprises in the mining district. It dates back to the year 1849, and to the month of November:—

TABLE I.

Six men contracted to do as much work as they could during a month in driving and excavating a level, 7 feet high by 7 feet wide at £7 per fathom.

	£	s.	d.
During the month 3 fathoms 3 feet and 4 inches were done, and therefore the amount due to them for this =	24	17	9

On the other hand they were debited—

	£	s.	d.	£	s.	d.
To 48 lbs. candles	1	12	0			
,, 50 lbs. powder	1	13	4			
,, safety-fusee	0	6	0			
,, hilts	0	0	3			
,, can	0	2	6			
,, smith's costs	2	6	10			
,, drawing to surface	1	15	6			
,, doctor and sick	0	9	0			
Total	8	5	5	8	5	5
And therefore they were entitled to receive the balance or				16	12	4

or £2 16*s.* odd each on the next 'setting-day.'

Sometimes these 'tut-workers,' as they are called, from the German 'todt,' or *dead*, are credited in addition with small percentages of the ore that may be extracted in the course of their excavations,[15] in order to induce them to keep it as separate as possible from the rubbish or 'deads;' and during the progress of the work they sometimes receive payments on account.

So far then for the work of preparing the way: we have next to consider the actual work of excavation. In this case the work

[12] These deductions are of course taken into consideration when the contracts are made. (K., p. xxiv; S., Q. 37, 339, and 1428.)

[13] P. 147.

[14] S., Q. 764.

[15] S., Q. 248 and 1281, *contra* 1602.

to be done is divided into several compartments or 'pitches,' and is in a similar manner put up to auction, save that here the men offer to do the work on consideration of receiving a certain percentage of the price realised for the ore, and of paying all, or nearly all,[16] the cost incurred before it is reduced to a saleable state.

Thus, to take an example of 'tribute,' as this method is termed, from the same mine for the months of August and September—[17]

TABLE II.

	£	s.	d.
We find that the men are credited with	68	5	9

which is the amount due to them at 7*s.* 6*d.* in the £ on £182 2*s.* 2*d.* realised by the ore.

They are debited on the other hand with—

	£	s.	d.	£	s.	d.
Candles (108 lbs.)	3	12	0			
Powder (195 lbs.)	6	10	0			
Safety-fusee	1	9	0			
Hilts	0	1	9			
Cans	0	2	6			
Saws	0	6	0			
Locks	0	1	6			
Smith's costs	3	19	6			
Drawing	3	0	11			
Dressing	6	10	8			
Use of grinder	0	8	10			
Sampling and weighing . . .	0	17	6			
Subsist or money drawn . . .	36	18	0			
Total	63	18	2	63	18	2
And therefore they have to receive a balance only of .				4	7	7

They obtain, as will be noticed, a certain sum on account[18] to support them until the balance is handed over, and this sum is termed 'subsist' or 'cist;' and they can relinquish the 'pitch,' on paying a fine of twenty shillings a man, should it prove irretrievably bad.[19]

[16] 'Tramming' is done sometimes at the expense of the men, sometimes at that of the adventurers (S., Q. 4069-71).

[17] P. 147. The contracts were then let for periods of two months.

[18] Some accounts state that the ores were sold every week, and that the miners at once received their 'tribute;' but perhaps it was only the case that they were at once credited with it.

[19] The dressing of the ores on the surface, or their preparation for the smelter, was at one time done chiefly by tribute, or at least by contract; more

Such then is a brief description of the system of wages in the Cornish mines, as it existed at one time, and as it is still constituted in its main features, although, as we shall see, it has undergone changes of detail.

recently it seems to have been executed to a great extent for daily wages, but some work is still done by contract with the tributer. S., Q. 1775 and 1776. *Cf.* 'Penny Magazine,' 27th December, 1834; *Statistical Journal*, vol. i, p. 73.

CHAPTER IV.

The Origin of the System.

The origin of the system, and, in particular, of that part of it which is most distinctive in character, and which Babbage described[1] as especially good, is buried in obscurity; but it seems to have certainly been in existence at as early a date as the middle of the last century.

For a Frenchman,[2] a M. Jars by name, who travelled and made observations in England in 1758, 1765, and 1769, expressly describes a similar system as prevailing in Cornwall at that time. His observations were collected and published at Paris under the title of 'Voyages Métallurgiques,' and a copy of the book is contained in the British Museum. In the third volume, which was published in 1781, he alludes to the Cornish mines. In the fifth section of the 'Troisième Mémoire' he says that the neighbourhood of Redruth abounded in copper mines; and in the seventh section of the 'Septième Mémoire' he describes Cornwall in eulogistic terms as 'cette province renommée depuis les tems les plus reculés par ses mines d'étain qu'elle fournit à toute l'Europe, et qui l'est aujourd'hui' (*i.e.* 1765) 'presqu'autant par celles de cuivre.'[3]

And then in the tenth section he proceeds to give an account of the way in which the tin mines are worked. 'L'usage établi,' he remarks, 'dans toutes les mines, est de donner l'extraction du minerai par entreprise; les entrepreneurs ont des ouvriers à leurs gages qui travaillent sous leurs ordres; quelques-uns sont ouvriers eux-mêmes.'[4] On a day, which has been previously fixed, those

[1] 'Economy of Machinery,' &c., sec. 306.

[2] Sir Charles Lemon pointed out this fact in his article in the *Statistical Journal*, vol. i, p. 74.

[3] 'This province, celebrated from the most remote time for the mines of tin with which it supplied all Europe, and almost equally renowned to-day for its copper mines.'

[4] 'The established practice in all the mines is to grant the privilege of

who are interested in a mine (*i.e.*, the adventurers), or their agents, assemble; and the contractors ('les entrepreneurs') make offers, bidding downwards ('au rabais,' *i.e.*, by 'Dutch' auction). The extent of each bargain is called a 'pitch,' and is usually 15, 20, or 24 fathoms of 'level' (*i.e.*, the distance of one 'winze' from another), and 7 fathoms in depth. The number of workmen who are to do the work is fixed at seven, for example, or eight, or nine. The time of the contract is always ('toujours') four months. The workmen find themselves the necessary tools ('outils'), light, and powder. The 'interested' have only to provide for the maintenance of the machines and the ropes; but they must bring the mineral to grass ('jour'), even dressed for sale. The contract is determined by a portion of the mineral extracted, *i.e.*, the contractors receive a third, a fourth, or a fifth, or sixth, or some smaller proportion, of the value raised; and in the tin mines they always receive their share in ore, but in the copper mines in cash. Hence the 'entrepreneurs' run risks, and have to judge by appearances. But not so the adventurers; and on this account the contractors can work for four months without interruption in the contract, but can also abandon the bargain after the first month, on the payment of £1 for each person.

Here then we have the main outlines, together with some of the details, of the system we before described. It seems, if we may trust the minute particulars of M. Jars' account, to be in a state of transition. The actual workmen appear for the most part to be hired for wages, and to be under contractors who agree to excavate the ore for a certain percentage of the selling price. And it is to be noticed that, although the 'entrepreneurs' are said elsewhere by M. Jars to be compelled to have workmen *of all kinds*, yet no express mention is made by him of the work to be done in preparation for the extraction of the ore, but only of the work of actual extraction. Now it will be remembered that the work of extraction, according to the description that we have previously given, was assigned to the tributers, and the work of preparation to the tut-workmen. But, as we shall subsequently notice, it is the tut-workmen who approximate more closely to ordinary wage-earners, and it is the 'tributers' who are further removed from that position. And yet M. Jars, confining his attention apparently to the work of extraction, speaks of the actual workmen as hired for wages.

extracting the mineral by contract; the contractors (or undertakers) have workmen in their pay who work under their orders; some are themselves workmen.'

But he also states that the 'entrepreneurs' are in some instances actual workmen; and in another passage he remarks that simple workmen often commence the 'exploitation' of a mine at their own risk. If the mine promises well, but the cost of extraction is great, they can dispose of their interests in it to others, who frequently advance them subsistence; and then, should the venture finally prove unsuccessful, they will go and work for wages in another mine in order to repay these advances. It is interesting to find that Pryce in his 'Mineralogia Cornubiensis' uses language which tends to corroborate this account of M. Jars; and Pryce, we must remember, was an actual resident in the mining district. He states[5] that 'shallow mines' are sometimes occupied by 'labouring miners;' and—what is even more important—he alludes to a custom, which was sometimes adopted, of setting or leasing a whole mine on *tribute*.[6] Some miner, he remarks, who may have several persons associated with him in the enterprise, takes a mine of the adventurers for a period of half a year, a year, or two years. If the mine yields tin, he pays the lord the share of the produce to which he is entitled, and hands over to the adventurers a half or a quarter of the remainder. If the mine on the other hand produces copper, he does not apparently pay the lord himself, but he does bear the sole expense of digging, of raising, and of dressing all the ore that is 'merchantable.'

It may be, then, that M. Jars has confused the details of the system; and this is not impossible in the case of the observations of a foreigner. But on the whole it appears more probable from an examination of his writings that he was a careful observer, and that he would have exercised special care in recording a practice, the unique character of which evidently produced a deep and abiding impression on his mind.

If then we adopt the latter conclusion, it is hardly fanciful to suppose that the system had been a long time in existence, and that it was now undergoing a transition—that the workmen were beginning to oust the 'middlemen,' and enter on the contracts themselves. This hypothesis derives support from the account given by Pryce, for at the time when he wrote the transition had apparently reached a further stage. For the modern system of 'tribute' in wages was in full vigour in his time as well as that

[5] P. 174.

[6] P. 187. *Cf.* also 'British Mining,' p. 107. The Mines Commission (1864) found that some of the mines in Wales were worked by workmen-adventurers, p. xxxiv. These 'sets' were called 'Poor Men's Ventures.'

system of leasing a mine as a whole which we have just noticed. That system indeed may well have proved the stepping-stone from the old order to the new—from the method of tribute as it is described by M. Jars to the method of tribute as it is found in more modern times.

It is, too, to be noticed that M. Jars' own language seems to refer to a custom, which was by no means novel, but had on the contrary been established so long that its main features might almost be said to be stereotyped. And from the general character of his description we can infer at once the probability of a still earlier date for the introduction of the custom, and the likelihood of the survival of its main features to a time subsequent to alterations in its minor details. For even at the period when he wrote the title of captain was apparently in existence, and was applied to the first master miner, who, then as now, had subordinates under him, and received a fixed salary every month, together with a certain share in the proceeds of the mine. Reference is also made, as we might expect, to the laws of the stannaries; and —what is more remarkable—it appears that the sale of the copper ores was even then conducted according to a practice named 'ticketing,' which has been a marked characteristic[7] of Cornish mining during a large part of its history.

According to this practice samples of the ores to be sold were sent before the day of the sale to the various smelters, and were taken by them to the assayers, who were men of practical experience rather than of scientific acquisitions. Having obtained the reports of these assayers, the representatives of the smelters determined upon the price they were respectively willing to give for the ores; and on the appointed day they met at Redruth or some other centre, put down the price on a ticket, and handed it to the chairman of the meeting, who was generally the agent of the company selling the largest amount of ore. The prices offered for the different ores by the different smelters were arranged in tabular form, and the chairman drew a line under the highest offer; and with this process the bargain was concluded. This practice of ticketing has been recently revived in the sales of tin, and its revival has excited considerable local discussion, as it

[7] *Cf.* 'Quarterly Review,' vol. 36, p. 90. Mr. John Taylor indeed in the 'Geological Transactions' says that in his time the sales of the *tin* were 'not very well' conducted, although the copper was sold by 'ticketing;' and M. Jars similarly maintains that the tin was sold in his day by a bargain between the tinner and the smelter. But the Quarterly Reviewer applies his description, it would seem, equally to copper *and tin.*

seems to be the result of a temporary rupture in a combination, or quasi-combination, which appears to have previously existed among the smelters.[8] But the practice does not seem to have been common in the sales of tin, although the recent revival is not without a precedent.[9] In the sales of copper, however, the observation of the practice appears to have been almost, if not entirely, without breach or infringement; and therefore the fact that it is mentioned by M. Jars tends to prove that he was describing a system, the main features of which had been, as we have stated already, stereotyped by traditional usage.

It is then possible, and even probable, that the introduction of the system was considerably anterior to the time at which M. Jars wrote; and it may be the case that it was in existence in a rudimentary form in the reign of Queen Elizabeth. At any rate the statement contained in a manuscript book of that reign, which was written by a 'bailiff of Blackmore,' and is quoted[10] by Sir Charles Lemon in his description of the system, is by no means irreconcilable with this hypothesis. The passage runs thus: 'The most part of the workers of the black tyn and spaliers are very poor men, as no doubt that occupation can never make them rich; and chiefly such tyn-workers as *have no bargains*, but only trust to their wages, although they have never so rich a tyn worke, for they have no profit of their tyn, if they be hyred men, saving only their wages, for their masters have their tyn. Now if they should chance to be *farmers*[11] themselves, and their worke fall bad, then run they most chiefly in their masters' debts, and likely to increase more and more, rather than to requite any part thereof; for of these two choyses, *to be a hyred man or a farmer*—the one is a certaintie, and the other an uncertaintie.[12] The

[8] *Cf.* 'Western Morning News,' 1st and 31st December, 1886. The small number of the smelters tends to create combination. It is curious to note that the copper ore has been taken to Swansea to the coal to be smelted, while the coal has been brought to Cornwall to smelt the tin. Partly this has been due to the cost of transit in its relation to the comparative quantity of coal used in smelting the two metals, and partly to the regulations of the stannary laws.

Mr. Frecheville, H.M.'s Inspector, remarks in the 'Mineral Statistics' (1884), p. 113, that 'the amount paid by the smelter per cwt. of metal contained in the ore is calculated from the results of a dry assay after deduction of 1¼ from the product per 20 (*i. e.* 6¼ per cent.) for "returning" charges. By an old trade-custom there is also a deduction on the weight of a parcel of tin ore of 3 lbs. per cwt.'

[9] S., *Q.* 1418.

[10] *Statistical Journal*, vol. i, p. 71. The italics are mine.

[11] Farmer = entrepreneur.

[12] A curious anticipation of the main disadvantage of tribute. *Cf. infra.*

farmer knoweth not how his worke will doe, until tyme that he have proved it, and must needs live in hope all the yere, which for the most part deceiveth him (as the saying is) "Qui spe vivit nusquam agit vitam . . ." Yet this much, I confess, of the wealthiest of tynners, which happily work together in one tyn worke with the poore man, they are very charitable and merciful towards their fellow-workers.'

Carew[13] again, who wrote at the end of the sixteenth century, states that 'the partners may be either such tinners as work on their own behoof, or such adventurers as put in hired labourers,' and that 'the hirelings stand at a certain wages,' 'either by the day' or 'for the year,' 'as their deserving can drive the bargain.'

From the character of these passages it is clear that any inference which is drawn must necessarily be of a hypothetical nature. But the hypothesis that the system had been introduced at an earlier date than that at which M. Jars conducted his inquiries, and that he wrote his description at a time when it was in a transitional state, and the taking of the contracts was passing from the 'entrepreneurs' to the workmen themselves—who even previously had sometimes entered into a bargain and worked a mine on their own account—is at least not at variance with the facts we have noticed.

A witness, indeed, before a committee of the House of Commons in 1887, maintained[14] that 'Cornish mining is of such a kind that it is impossible to estimate the work done by the miner by time,' and that therefore 'from the first beginning of Cornish mining, up to the present moment, it has been necessary to pay by results;' and another witness declared[15] in similar language that 'tribute has been' 'in use' 'for centuries' in Cornwall.

Whether the system of tutwork was in existence or not at the time when M. Jars wrote, or at a previous period, it is not possible to say; but it may be the case that the work of preparation was done entirely by 'hirelings,' and the taking of the contracts may have applied to the excavation of the ore alone. It may be that by a natural analogy it was afterwards extended to the work of preparation, save only that in this latter case, where previous precedents may have been in favour of definite wages, and where the quantity, rather than the quality, of the work was the more important, the *ad valorem* arrangement of tribute was not adopted.

[13] Carew, it must be said, seems to be not unfairly described by the Quarterly Reviewer (vol. 102, p. 291) as a 'gentlemanly amateur, rather than a painstaking observer or antiquary.' His book was published in 1602.

[14] S., *Q.* 30. *Cf. Q.* 211.

[15] S., *Q.* 1475.

CHAPTER V.

Its Subsequent History.

But, hypothetical as the theories we have just put forward must necessarily be, we are on surer ground when we attempt to trace the history of the system from the time of M. Jars onwards. In 1827, when the article in the 'Quarterly,'[1] to which we have previously referred, was written, the system had apparently assumed its modern shape, and tutwork and tribute were both found. The pitches at this time, however, seem to have been generally let for periods of two months, and to have been usually apportioned to two or four men. In 1834, in the 'Penny Magazine' of the 27th of December, the ordinary and familiar description of the system is similarly given, and here again we find that the contracts are stated to have been made for periods of two months. In the same magazine, in the year 1836, the system is described in identical general terms; but it is also mentioned that the pitches, which were let at one time for periods of six months, were now let from month to month, and the writer characterises this change as being 'greatly to the permanent advantage' of the miners, because 'greater certainty' of subsistence has thereby been introduced. Sir Charles Lemon, in 1838, in an article in the *Statistical Journal*,[2] adheres to the same general description, following an account given by Mr. John Taylor in a lecture delivered before the Society of Arts in March, 1837; and Mr. Laing, in 1842, in the 'Atlas Prize Essay,' on 'National Distress,'[3] does not make any other departure from the ordinary contemporaneous account except the statement that even then the contracts were still 'generally' put up for periods of two months. Mr. Babbage, in the fourth edition of his

[1] Vol. 36, pp. 63, &c. [2] Vol. i, pp. 65, &c.
[3] Written in 1842 and published in 1844.

'Economy of Machinery and Manufactures,' which was published in 1846,[4] bestows high commendation on the system, and says that tribute is applied to the raising and dressing of ores, and consists of a certain part of the value of the product when it has been rendered saleable; and that tutwork is the name given to contracts for sinking shafts, for driving levels, and for making excavations at a certain price for the fathom in depth or length, or the cubic fathom. Both in tutwork and tribute, he remarks, the work is offered at public auction. The descriptive book entitled 'Cornwall: its Mines and Miners,' and published in 1855, gives an elaborate detailed account, but is in accord with the prevailing description. So are the writers in the 'London Quarterly' of 1856, and the 'Dublin University Magazine' of 1861. The familiar description is also given in the report of the Mines Commission of 1864, over which Lord Kinnaird presided. 'There are two classes of workers,' the Commissioners state,[5] 'called tutworkers and tributers. The former contract at so much a fathom to drive the levels, sink shafts, and put in rises and winzes. The latter neither drive nor sink, but are employed in getting out the ore from the levels, ventilated and partially explored by the tut-workmen, and they are paid so much in the pound on the market value of the ore, which they bring to the surface, when sold.'

But we have yet to notice an important variation from these different accounts. We may refer, for example, to a manual entitled the 'Principles of Metal Mining,' which forms part of 'Collins' Elementary Scientific Series,' and is written by a Mr. J. H. Collins, at one time honorary secretary to the Miners' Association of Cornwall and Devon. This book, which bears the date of 1875, states indeed that shafts are sunk and levels driven at tutwork, *i.e.*, a fixed rate per lineal fathom, that the 'takes' are mostly for one or two months, and that the excavated material is sometimes drawn to the surface at the expense of the miner, and sometimes at the expense of the adventurers, and deductions are made from the gross earnings of the men for the cost of materials, &c. But the ore itself, the writer remarks, is excavated or 'stoped,'[6] *sometimes by tutwork,*[7] *i.e.*, a fixed rate per ton, though, he adds, it is *very often* done by tribute (*i.e.*, a certain proportion of the value), the tributers engaging, either merely to break the ore,

[4] (And 1835) sec. 307.

[5] P. xix.

[6] 'Stope' = the term for removing the ground by steps or layers, either downwards or upwards.

[7] The italics are my own.

or to pay all the charges incurred until it is ready for sale. The significant remark is appended that tributing has 'gone a good deal out of use of late.'

In a similar way Dr. C. Le Neve Foster, who was the first inspector appointed for Cornwall under the Metalliferous Mines Regulation Act, writing in 1883 in the ninth edition of the 'Encyclopædia Britannica,' adheres in some respects to the ordinary account, but gives indications also of the important change we have just noticed. He says that the driving of levels and the sinking of shafts are generally executed 'at a certain price per running yard or fathom,' that the agents take care that the excavation is of the proper dimensions and in the right direction, and that at the end of a fixed period the work is measured and the cost of the materials which have been supplied (*e.g.*, explosives, steel, candles, &c.) deducted from the gross earnings. He also alludes to the system of tribute, which he suggestively describes as a speculation on the value of the ore in a certain area or pitch, and he says that this tribute consists of a payment given on all the ore extracted—a payment of a certain proportion of the value after the cost of breaking, of hauling, and of dressing, has been defrayed. But, like Mr. Collins, he adds that the mineral is sometimes extracted 'at so much per cubic yard or fathom excavated,' or 'so much per ton of mineral extracted.'

These statements, again, are in general agreement with the evidence given before Lord Kinnaird's commission; and it is very instructive to find, at a still earlier date, indications of such a variation, at least in a rudimentary form. The 'Mining Journal,' for instance, of the 3rd of September, 1836, states that 'latterly' in some mines 'the contrary practice' (to setting pitches on tribute) 'has prevailed,' and the 'lode is stoped at so much per fathom,' although indeed, it adds, the practice is an innovation chiefly found in the mines worked by London companies. In an issue of the same paper on the 2nd of January in the same year we do, as a matter of fact, find an agent of one of the mines reporting that he is 'trying' a copper lode 'on tutwork;' and we may perhaps go back further even than this. Mr. John Taylor in 1814 describes tutwork as work which is 'done by measure,' and used in 'sinking shafts, driving levels, or *stoping* ("*stoaping*") *ground*.'[8] And Pryce still earlier,[9] after mentioning[10] both tutwork and tribute, remarks[11] that in some mines the adventurers

[8] The italics are my own.
[9] *I.e.*, in 1778.
[10] P. 175.
[11] P. 192.

set the tin and the copper 'to break by the fathom,' because, he significantly adds—and we shall see the bearing of this remark later—the tributers fail to observe their agreements. In another passage,[12] however, he speaks of the 'stoping' of *dead* ground by tutwork; and it is perhaps this practice to which reference is made by Mr. Taylor—though not indeed by Pryce himself—in the remarks we have just quoted.

The evidence given before Lord Kinnaird's commission tends, as we have said, to corroborate these statements. 'We are breaking ore by tutwork,' 'we raise our ore principally by tutwork,' remarks[13] one witness. Another declares[14] that the mine 'must be a very good mine where the majority are tributers;' and the general tenour of the evidence shows that poor mines are often worked chiefly by tutwork. It is indeed alleged[15] that it is precisely this difference between the yield of the mine, which produces the prevalence, as the case may be, of tutwork or tribute, for it 'all depends,' argues the witness to whom we have just referred, 'on the productiveness of the mine.' Another maintains,[16] on the contrary, that the question turns in a large measure on the way in which the men themselves have been 'brought up;' for tributers do not like to work on tutwork, and the tut-workers experience a difficulty in working on tribute. But, whatever be the true reason, there is no doubt, according to the evidence furnished to the commissioners, that different mines exhibit great variations in this respect. In one place the majority of the men appear[17] to be tut-workers, in another[18] there are more tributers, in a third[19] the men are chiefly tributers, in a fourth there are no men on tutwork, in yet another[20] there are no tributers, and in another[21] the number of men employed respectively under the two systems is about the same.

On the whole the balance of evidence seems to show that at the time of the commission the amount of work let upon tribute was decreasing; and the commissioners themselves state[22] in their report that 'in the event of a rich lode being discovered it is 'frequently worked by tutwork.' A significant reason for this change—to which we shall have to draw more attention later—is supplied[23] by one witness. In consequence of the 'starts,'[24] he

[12] P. 180. [13] *Cf.* Q. 7487 and 7488. [14] Q. 3470.
[15] Q. 3468. [16] Q. 5046.
[17] Q. 7486 and also 10349. This last answer refers to Cornwall generally.
[18] Q. 11245. [19] Q. 6146 and also 11451.
[20] Q. 1396. [21] Q. 3469.
[22] P. xxiii. [23] Q. 10351.
[24] A 'start' = a piece of unexpected good fortune in the yield of a lode.

maintains, 'the mine agents have become more cautious, and they set the men to stope, instead of tribute.'

In the case, indeed, of the Dolcoath Mine, which is now the most prosperous mine in Cornwall, a 'captain' states[25] before the commission that in the course of the month the agents 'set out all the stopes for the mine at so much per ton for what is fit to stamp when it is brought to the surface.' And these men, who receive a certain price per ton, he characterises as a 'kind of tributers.' They seem, if we may say so, to constitute an intermediate stage between ordinary tutwork and ordinary tribute. 'They depend,' it is true, as the same witness remarks, 'quite upon their own resources,' for they are only paid for the saleable ore that is sent to the surface, and the pitch may not impossibly turn out worse, though it may also turn out better, than the captains or the men anticipated at the time of the 'survey.' But, on the other hand, we must not forget in this connection the commentary made by Mr. John Taylor,[26] when he said that the ordinary Cornish custom of tribute was superior to that in other mining districts, and that the Derbyshire practice, by which the men raised the ore at 'cape' (or a certain price per ton), approximated indeed to the Cornish custom, but fell 'very short' of it. These 'kind' of tributers in fact seem to speculate on the yield of the lode in quantity more than in quality; and, therefore, on the one hand they resemble tut-workers, inasmuch as they are paid merely for quantity, and on the other they resemble tributers, because they speculate also to some extent on the yield of the lode.[27]

This last piece of evidence, then, is of no little significance, and tends to confirm the statements of Mr. Collins and Dr. Foster; and it is strengthened by some of the examples of pay-sheets given in an appendix[28] to the commissioners' report.

[25] Q. 8735.
[26] *Cf.* 'Geological Society's Transactions,' vol. ii, p. 321.
[27] *Cf.* below, chapter ix.
[28] Appendix B, xii, pp. 445 and 446.

Table III.

Thus a 'bal-bill' at Carn Brea supplies an example of the ordinary system of tutwork:—

For May, 1863. *Paid 3rd day of July*, 1863.

—— and Co. (four men).

	£	s.	d.
1 fathom 0 feet 7 inches at £12 a fathom	13	3	4
1 ,, 0 ,, 0 ,, £13 ,,	13	0	0
Assisting shaftmen	1	15	0
	27	18	4

Sundry deductions :—	£	s.	d.	£	s.	d.
To candles	1	19	4			
,, powder	1	13	4			
,, safety-fuse	0	6	0			
,, sundries	0	1	0			
,, smith cost	1	5	5			
,, drawing	0	6	3			
,, tramming	0	0	0			
,, doctor and club	0	6	0			
				5	17	4
				22	1	0
Barber's deduction				0	3	0
				£21	18	0

Table IV.

And a 'bal-bill' at Wheal Basset similarly supplies an example of the ordinary system of tribute:—

For October, 1863, *and Paid 27th November*, 1863.

—— and partner (two men).

	£	s.	d.
By £20 18*s.* 6*d.* at 7*s.* in £	7	16	11

	£	s.	d.	£	s.	d.
To overcharged on Tribute	0	3	4			
,, 18 lbs. candles	0	12	0			
,, powder	0	0	0			
,, fuse, hilts, clay, 6*d.*	0	0	6			
,, cans, shovels, spades	0	0	0			
,, dressing	0	12	0			
,, mixing and samples	0	7	4			
,, smith cost	0	3	6			
,, drawing	0	12	0			
,, subsist	0	0	0			
				2	10	8
				5	6	3
Doctor, club, and barber				0	2	6
Balance				£5	3	9

TABLE V.

But at Dolcoath we get, indeed, the following 'bal-bill' of tribute:—

18th June, 1842.

—— (four men).

	£	s.	d.	£	s.	d.	£	s.	d.
Amount £7 18s. at 12s. 6d.							4	18	9
Balance ending January	0	16	2						
Mixing and dividing	0	1	2						
Grinding	0	3	6						
Box and drawing	0	15	4						
Smith's costs	0	8	9						
Candles and materials	1	14	5						
Powder	0	15	2						
				4	14	6			
Subsist				7	6	6			
Doctor				0	3	0			
							12	4	0
Debt, Club, &c.							£7	5	3

But we also find the following 'bal-bills' for tutwork at the same mine:—

TABLE VI.

Nov. 1863. *Paid 26th Dec.*

—— and partners (six men).

	£	s.	d.	£	s.	d.
Driving 26 fathoms at 14s.				19	16	8
Tin-stuff, 25 tons 4 cwt., at 7s.				8	16	4
				28	13	0
Box and drawing	0	16	4			
Smith's costs	1	11	11			
Candles and materials	2	6	0			
Powder	2	0	0			
				6	14	3
				21	18	9
Doctor				0	3	0
				21	15	9
Club 4/6, and barber 1/6				0	6	0
				21	9	9
Subsist				0	0	0

TABLE VII.

Nov. 1863. *Paid 26th Dec.*, 1863.

—— and partners (six men).

	£	s.	d.	£	s.	d.
Tin-stuff, 198 tons 9 cwt. 6 qrs.				59	10	8
Deduct charge last month				18	0	0
				41	10	8
Assisting timberman				1	4	3
				42	14	11
Box and drawing	3	16	11			
Smith's costs	4	11	1			
Candles and materials	6	1	2			
Powder	4	15	2			
				19	4	4
				23	10	7
Doctor				0	3	0
				23	7	7
Club 4/6, and barber 1/6				0	6	0
				23	1	7
Subsist				0	0	0

In 1887, before a committee of the House of Commons, evidence of a similar character was given. Sir (then Mr.) Warington Smyth stated on the one hand[29] that, where the ore is 'disseminated throughout the width of the vein,' or the 'vein is very distinctly and sharply divided from the country' (*i. e.*, the surrounding ground) 'by a band' 'of soft clay,' 'the whole of the material may have to be sent up,' and 'it may be advisable to work the whole vein out by tutwork.' On the other hand he declared[30] that 'in many mines it may be principally by means of the tributers that the ore is raised,' and that this system 'will be particularly introduced where the load is irregular, or there is a great deal of "deads" to be left behind.' Another witness affirmed[31] that 'in many cases the tributer is done away with' in East Cornwall,[32] and that 'as a rule' the lode would now be set on tutwork, if it was known to be uniformly good.[33] But Captain Josiah Thomas, the manager of Dolcoath, maintained,[34] on the contrary, that tributing could not be abolished without injury to the men and the mine alike—to the men, because they would be deprived of the opportunity of increasing their earnings—to the mine, because the 'tributers sometimes discover very rich deposits of ore, which probably the shareholders would not go after.'[35] Captain Bishop, however, the manager of East Pool, which may perhaps be ranked next to Dolcoath, and be termed the second mine in importance in the county, affirmed[36] that there were 'at present' 'no tributers' there; and a working miner alleged[37] that tutwork was 'by far' the 'most extensive' system, although, being a tributer himself, he did not wish to see tribute abolished.[38] Another declared[39] that tribute was 'going less all the time,' and was 'very little now;' while a third, hailing from the St. Agnes district, stated[40] that in that part of the county the proportion of tut-workers and tributers varied at the different mines.

Confirmatory evidence of the change may also be gathered from recent issues of local newspapers. Thus in a report[41] of Wheal Basset, which was submitted by the agents at a four-monthly meeting held on the 7th of October, 1886, we read that not only was tutwork being employed in the work of preparation—not only, for example, was an engine shaft being sunk by nine men

[29] *Q.* 244. [30] *Q.* 313. [31] *Q.* 1301.
[32] *Q.* 1338, 1477-81. [33] *Q.* 1324-26. [34] *Q.* 1626-31.
[35] *Q.* 4346, 6016, and 6196. [36] *Q.* 1916.
[37] *Q.* 1980 and 1981, 2222 and 2223. [38] *Q.* 2372 and 2373.
[39] *Q.* 2549. [40] *Q.* 3221.
[41] *Cf.* 'Western Morning News,' 8th October, 1886. 'Wheal' and 'huel' are local terms for a 'mine.'

and three boys, at 60*l.* per fathom, a level being driven by six men and three boys, with a machine, at 8*l.* 10*s.* per fathom, and a winze being sunk by six men at 10*l.* per fathom—and not only were there in the 'tribute department' twenty-two pitches being worked by sixty-four men on tributes varying from 6*s.* to 13*s.* 4*d.* in the £, on a standard of 50*l.* per ton for tin—but that also there were certain parts of the mine, which were being 'stoped' respectively by eight men at 7*s.* per ton, by six men at 6*s.* 6*d.* per ton, by eight men at 6*s.*, by six at 6*s.* 6*d.*, by six at 6*s.*, by nine at 6*s.* 6*d.*, by twenty-three at 6*s.* 6*d.*, and by two at 5*l.* per fathom and 4*s.* per ton of stuff. In an issue, again, of the same paper, which contained a report made on the 9th of September, we find that at the famous Botallack mine there were forty-nine men and nine boys opening, and eighty-five men and ten boys 'stoping,' ground on *tutwork and*[42] tribute.

In the 'West Briton' of the 10th of December, 1885, we are similarly told that the agents of Tolgullow United Mine reported that they proposed, indeed, to drive a certain level by six men at 7*l.* per fathom, and another by four men at 4*l.* 10*s.* per fathom, and that their tribute pitches were producing the usual quantity of tin, but that they also had four stopes at an average price of 7*s.* per ton working by sixteen men. In the same paper of the 19th of November, Captain Josiah Thomas is reported to have addressed the men at Dolcoath on their usual monthly pay and setting day with reference to statements, which had been circulated about their earnings, and to have included under the term 'tut-workmen' 'all' those 'working in ends, winzes, shafts, *and stopes.*'

It is true, indeed, that the system of tribute is not by any means defunct, even if it can strictly be described as being within measurable distance of death. For it is easy to discover several references to it in the reports of the different mines inserted in local newspapers, and the passages we have already quoted, together with those contained in the Parliamentary papers to which we have referred, might be used to illustrate this. In a local paper indeed, during the month of December, 1886, the agents of the Bedford United Mine are stated to have said that the work in one part of their mine was principally confined to the tribute ground which was available; and in the 'West Briton' of the 22nd of January, 1885, it is reported that the year's accounts of South Condurrow showed that the labour cost had amounted to 3,549*l.* for tut-workmen, and to little less, or 3,503*l.*, for tributers.

[42] The italics are mine.

The paper added that a 'great deal of' the tin had been 'raised on tribute:' that 106 tons, for example, had been raised by seventy-four tributers at an average cost of 25*l.* 16*s.* per ton, while the tin itself had realised an average price of 44*l.* 14*s.* In the same paper we read, on the 31st of December, of tributers working at Wheal Grenville, on the 24th of December, of six pitches working at West Seaton, and, on the 17th of December, of ten pitches at Wheal Peevor.

But, while the system of tribute is still by no means uncommon, there can be little doubt, as we have before remarked, that the system of tutwork is making encroachments upon it; and the following table of the comparative amounts charged at Dolcoath to labour cost and to tribute respectively during the space of two years will illustrate this:—

TABLE VIII.[43]

Date of Three-Monthly Meeting.	£ of Labour Cost.	£ of Tribute.
	£	£
February 2, 1885 . . .	10,837	1,528
April 7, „ . . .	10,658	1,362
July 20, „ . . .	10,699	1,571
October 12, „ . . .	10,708	1,883
January 4, 1886 . . .	10,933	1,717
March 29, „ . . .	10,869	1,623
September 13, „ . . .	11,388	1,293
December 6, „ . . .	11,607	1,673
Total	87,699	12,650

With this table it will be instructive to compare some figures given in 'Cornwall: its Mines and Miners.'[44] Thus in 1849 it appears that at the Fowey Consols Mines there were 358 tut-workers and 340 tributers. The tut-workers cost 16,347*l.* 10*s.* 10*d.* and the tributers 18,821*l.* 7*s.* 11*d.* And in 1836 in the Consolidated Mines the number of the tributers was 392 and their cost in wages 25,030*l.* 17*s.*, while the tut-workers numbered 441 and cost 26,177*l.* 5*s.* 8*d.*

The two facts, then, which are thrown into the greatest prominence by our review of the history of the system of wages in

[43] The figures in this table are taken from the reports of the meetings given in local newspapers.

[44] Pp. 175 and 178. The two mines mentioned were representative of the largest mining enterprises of that date, and may consequently be properly compared with Dolcoath, which now occupies a similar position. *Cf.* S., *Q.* 1611.

the Cornish mines, are the encroachment of tutwork upon the province occupied by tribute, and the diminution of the intervals at which the payment of wages is made. The two changes are not without a connecting link; and this will appear more clearly when we examine the reasons to which they may be ascribed. But these reasons themselves will be more evident, if we first devote some attention to the advantages and drawbacks of the general system.

CHAPTER VI.

Its Advantages.

In considering the system we must of course endeavour to base our judgment upon its essential merits and demerits, and to separate these, as far as may be possible, from any accidental accretions due to external influences.

Thus, in endeavouring to appraise at their true value the advantages of the system, we must draw attention to the significant fact that temperance, if not total abstinence, is a common quality among the Cornish miners, and that this has been ascribed in a large measure to the influence of Wesleyan Methodism. How far indeed Wesleyan Methodism has affected the general character of the miner it would be impossible to decide, for we could not determine upon the exact proportions in which his religious, his moral, and his economic conditions have acted and reacted upon one another. But there can be no doubt, as we have noticed before, that the 'benign influences of that Gospel which' has been 'so faithfully and zealously promulgated' 'by the Rev. John Wesley and his coadjutors' have produced very remarkable and abiding results; and it is therefore necessary to allude at least to these influences in any review—however fragmentary—of the character and habits of the Cornish miner.

Passing on, then, to the more special subject with which we are at present concerned, the advantage, which has been placed in the forefront by most of the writers who have described the system, is the prevention of industrial disputes. This advantage was naturally emphasised some forty or fifty years ago; for the contrast between the strikes and rumours of strikes in the other parts of the country and the peaceful condition of Cornwall was so remarkable that it must have forced itself upon the attention of the dullest observer. 'Strikes are unknown.' 'The different

relations adjust themselves.' 'The rate of wages regulates itself by the demand for labour.' 'There is no combination or union; no disagreement and no strikes.' These and other similar remarks are almost commonplaces in the discussions and descriptions of the Cornish mines of that date. And there can be no doubt that this language is amply justified. This advantage may be admitted without hesitation to belong to the system, whether it take the form of tutwork or tribute.

But we shall obtain a clearer idea of the nature of this advantage, and perhaps derive some assistance in considering the problems of co-operative productions, if we ask, and endeavour to answer, the question: Why is it that there are 'no strikes,' and that 'the different relations adjust themselves?' The answer is simple: it is because, as a local newspaper puts it,[1] the workman is 'in a sense his own employer.'

Now General Walker has shown[2] that the essence of co-operative production consists, not as is sometimes supposed in the possession of capital by labour, but in the elimination of the employer. It is in this sense, and in this sense alone, that it can be strictly said to imply the cessation of industrial strife; and even in this sense it would probably be more correct to speak of the mitigation of strife than of its entire cessation. For the system pursued in the Cornish mines does not necessarily imply the *abolition* of strife, although it is true that in its practical working contention has been reduced to a minimum, and disputes of large proportions have generally been unknown.[3] And why? Because the different 'pares' of workmen compete directly against their fellow workmen for a share in the distribution of wealth; and

[1] 'Redruth Independent,' 10th April, 1885.

[2] *Cf.* 'Wages Question,' chap. xv.

[3] They cannot, however, be strictly said to be entirely 'unknown,' for in 1872 we read of a strike at Wheal Basset (*cf.* 'West Briton,' 4th January, 1872), and in 1878 and 1879 (*cf.* ibid., 27th March, 25th April, 23rd May, 1878; also 'Mining Journal,' 11th January, 1879) of two strikes at the Devon Great Consols mine, one in resistance—partly to prevent any increase in the indebtedness of the miners to the local shopkeepers—to the reintroduction of the five-weekly in lieu of the four-weekly month established in 1872, and the other in opposition to the abolition of 'Maze-Monday,' as the Monday following the pay-day was termed. The day was given, according to the evidence of a witness before a parliamentary committee in 1887 (*cf.* S., Q. 1541), for the repair of tools, &c., for the succeeding month, and is now less prevalent than it was (*cf.* S., Q. 1550). These disputes, however, instructive as they undoubtedly are, may perhaps be fairly regarded as the conspicuous exceptions to a general rule, and it is not without significance that the men are reported to have shown considerable anxiety during the strike of 1878 that no damage should be done to the mine.

the employer does not intervene as a 'buffer' or middleman between one batch of workmen and another.

But this, it is to be remembered, does not carry with it the conclusion that contention might not arise between the different workmen, if they were united in a large business, and directed that business themselves. On the contrary, it might be argued that it rather tended to show that the spirit of contention, instead of ceasing, would be likely to present formidable obstacles to the successful conduct of the business. For the system in the mines might be said to succeed because the enterprise of the workmen is confined in each instance to a comparatively narrow sphere, and also because the different pares enter into direct competition with one another, and their interests on the 'setting day' are to that extent divergent. But this divergence of interests would be very likely to be fraught with dangerous, if not fatal, consequences to the success of co-operative production, if it were projected on a large scale; and it is not enterprise on a small scale, but the management of large undertakings, which is generally contemplated by the advocates of that system.

It is true that one of the writers in the 'Penny Magazine' remarks[4] that even the Cornish miners may sometimes combine to prevent less than a certain sum being accepted as the price for which a contract is taken; and Mr. John Taylor declares[5] that it is precisely this danger of 'combination,' which is 'effectually prevented' by that declaration of a reserve price, which is usually made by the agents. It may also be the case that, with a view to enforcing some such conditions as this, an union may eventually be established. For, in some respects at least, the interests of all the miners may be identical, and the concentrated strength of an union might enable them to obtain some of the reforms they may consider desirable.

But the formation of such an union would also in all probability exercise no inconsiderable influence upon the nature of the system itself; and there can be no doubt that the fact hitherto placed in the greatest prominence on the setting day has been the divergence of interests between the different pares.[6] It is from this point of

[4] 27th December, 1834.

[5] 'Geological Transactions,' vol. ii, p. 317.

[6] These parties or pares consist sometimes of as many as twelve men and boys, sometimes of sixteen, sometimes of eighteen, sometimes even of twenty-four or thirty-six. They generally divide the money they earn in equal shares; but in some instances they may employ a labourer, or some of their own number may be boys working at a lower rate of pay. This last fact was indeed adduced by a witness before a committee of the House of Commons in

view that the system sheds a flood of instructive light on the problems and limits of co-operative production. The system pursued in the slate quarries of North Wales, which attracted the notice and commendation of Cairnes,[7] and the practice sometimes adopted in railway construction of letting sub-contracts to gangs of navvies,[8] have their analogies with the Cornish system; but in no case has the divergence of interests between the several small parties of workmen been more strongly brought out than on the setting day at a Cornish mine.[9]

From another point of view the essential characteristic of co-operative production, and the fact that it involves the elimination of the employer and not of the capitalist, are strikingly illustrated by the Cornish system. For the miners, whether working by tutwork or tribute, can scarcely be described as capitalists, but they may with some reason be termed employers. They do not themselves supply the materials, the tools, or the machinery; but these are furnished to them by the adventurers, or advanced by the merchants, and are charged against their accounts at the end of the month. It is true that they have not

1887 as a powerful argument against a proposal for a separate payment to each member of the pare in lieu of the existing system of a lump payment to the 'taker.' It appears that in some instances these payments have been made, not in cash, which can be readily divided among the several partners, but in notes, which have to be taken to a public-house, and there changed and distributed. In other cases, however, the sum has been paid in 'small cash;' the purser has been willing to give change, if asked; and the money has been divided without recourse to a public-house. A special clause to this effect was inserted by the committee in the Bill which had been referred to them, and is contained in the Act as passed. It need hardly, however, be pointed out that the possibility of such difficulties and disputes over the division of the earnings—infrequent as they appear to be—supplies an additional basis for the argument we have adduced in the text; and in the 'balbills' of one mine at least the purser seems to have himself indicated the average amount belonging to each of the partners in the pares. Sometimes, indeed, it may happen under the system that a man may be set to work with partners he does not like,—although, it appears, the agent would in most cases readily alter the arrangement, if he were asked to do so, and, in the St. Agnes district at least, though not apparently in the neighbourhood of Redruth, the taker—subject to the agent's approval—can choose his own men. 'Generally,' however, it would now seem, 'the same gang go together, and, unless the men differ very much on the point of price, the one pair usually succeeds to the same place, and sometimes holds it for many months or even years together.' (*Cf.* S., *passim.*)

[7] 'Essays in Political Economy,' No V.

[8] *Cf.* 'Lectures on the Labour Question,' by T. Brassey, p. 139; *cf.* also the 'butties' in South Staffordshire collieries.

[9] The competition on the setting days is said, however, to be now becoming much less keen. *Cf.* below, chapter ix.

hitherto received their earnings until the setting day, and that their wages have been as a rule a month in arrears. Lord Kinnaird's commission[10] stated in its report that 'wages were frequently only paid once a month,' and 'a month's wages kept in hand;' and this statement rested upon the evidence of several witnesses. So far, then, they might appear to be capitalists.

But, on the other hand, 'cist' or 'subsist' has often been advanced to them;[11] and there is only too much reason to fear that they are in a chronic state of indebtedness to the local shopkeepers. For, as Lord Kinnaird's commission pointed out,[12] the consequence of keeping a month's wages in hand was that a miner, who came to a fresh mine, did not receive any pay for the space of two months; and therefore, the commissioners add, he 'generally contracts debts to the smaller shopkeepers.' 'The miners,' they remark in another passage, 'are frequently involved in debt.' A witness before the commission emphatically declares[13] that the 'curse of the population' is 'most certainly' 'the large number of miners,' who 'are in debt to the small shopkeepers,' or to 'travelling packmen,' and he says that this indebtedness arises in some degree from the month's arrear. Another witness describes[14] the change, which had been effected in a mine in the north of England, of making monthly instead of quarterly payments as 'one of the great advantages' the mine possesses; and he adds the significant statement that under the former system the men were 'over head and ears in debt.' The 'Daily News' correspondent in Cornwall in 1885 similarly characterises[15] the 'credit-giving shopkeeper' as the 'miner's best friend,' and supplies an account—humorous indeed, but very instructive—of an interruption which was made at an electioneering meeting. An orator was concluding his speech with the question, 'and now gentlemen, can you tell me who is your best friend?' when he was met by the unexpected reply, 'the shopkeeper.' On the whole then it seems that the Cornish miners may be more correctly described as employers than as

[10] P. xxiii.

[11] *Cf.* K., 2453, 3585, 7859, and 8809. The monthly payment was also found in the lead mines of the north. *Cf.* Q. 13442 and 13629.

[12] Report, p. xxiii, Q. 3584.

[13] Q. 10287-90. *Cf.* also Report of Commission on Housing of Working Classes, Q. 8094.

[14] Q. 17825.

[15] 'Daily News,' 17th and 21st September, 1885. This indebtedness to the shopkeeper probably must mean higher prices than would prevail under a cash system. (*Cf.* K., p. xxiii, and Q. 3584, S., Q. 2003, 2184, 3235, and 3351.)

capitalists, and that the comparative absence of strife is due, not to the elimination of the capitalist, but to the practical disappearance of the employer.

It cannot, however, be disputed that the interests of the miners are more closely bound up with the prosperity and adversity of the mine than would be the case with mere wage earners. Even the tut-workers have a direct interest in the increase of the work done. So far indeed their position is analogous to that of wage-earners who are paid by the piece; and Professor and Mrs. Marshall have shown [16] that all piecework involves of necessity an element of co-operation. They are distinguished, however, from mere piece-workers, because they are debited with the cost of all the materials and tools supplied, and make their own contract in an open market, which is manifestly adjusted to the conditions of supply and demand. As Mr. John Taylor remarks,[17] in the performance of work by contract the Cornish system is 'probably similar' to the practices followed elsewhere. But it is the 'plan of making' the contracts, 'which it is believed is peculiar to Cornwall'—the plan of 'periodically bringing all the work to a kind of public auction.'

It is, however, in the case of tribute that the interests of the workmen are most intimately connected with those of the adventurers, for here they share in the price that is realised. Babbage's words are worth quoting in this connection. He is discussing the question of industrial partnership—'a new system of manufacture,' as he terms it—and he remarks that the 'conditions' of this new system are 'that every person employed should derive advantage from the success of the whole, and that the profits of each should advance as the factory itself produced profits without the necessity of making any change in the wages.' And then he proceeds [18] to say that the system which 'has long been pursued in working the Cornish mines, although not exactly fulfilling these conditions, yet possesses advantages which make it worthy of attention as having nearly approached towards them, and as tending to render fully effective the functions of all who are engaged in it.' Tribute, however, he characterises as being especially good. 'No other method,' he declares, 'affords to the workers a measure of success so directly proportionate to the industry, the integrity and the talent which they exercise.' In similar language Mr. John Taylor maintains that tribute is the

[16] 'Economics of Industry,' iii, ix, 2.

[17] 'Geological Transactions,' pp. 316 and 317.

[18] Sec. 306.

part of the Cornish system which is most deserving of attention—a system which, he declares, 'so completely answers the purpose of combining the interests of the working miner with those of his employer.'

As the result of this combination of interests—this 'quasi-partnership,' as it may perhaps be termed—two consequences follow, which are in some respects implied in one another. The independence and foresight of the workmen are elicited; and the maximum of output is secured. The miner, whether he works by tutwork or by tribute, has to employ his own judgment with regard to the character of the work. He has to calculate the expense it is likely to entail in the way of materials, &c. He has, in short, to exercise foresight and intelligence. He is thrown to a great extent on his own resources, and is responsible to himself for success or failure. And hence it was that Mr. Laing in 1842, in the 'Atlas Prize Essay' on 'National Distress,' described[19] Cornwall in the most glowing terms, basing his opinion on the report[20] of the Children's Employment Commission. This is 'by many degrees,' he writes, 'the brightest picture we have ever met with of the condition of any considerable portion of the labouring class in England at the present day.' And he quotes from the report the significant statement that 'the miners are not only as a class intelligent for labourers, but men of considerable knowledge. They have a character of independence something American.' Lord Kinnaird's Commission, again, describes[21] them in similar language as being 'particularly courteous and intelligent.' Their 'information,' the commissioners say, 'especially on religious subjects, is very remarkable.' A writer in the 'Leisure Hour' goes yet further, and declares[22] that 'as practical miners there are no better men than have been brought up in the mines of Cornwall.' 'It may fairly be asserted,' maintains[23] another writer, 'that the solution of every intricate problem in mining geology is generally assigned to a Cornish agent, and every task requiring skill, resource, and courage intrusted to a Cornish miner.'[24]

The intelligence to which these assertions testify is, no doubt, partly to be ascribed to the diversified character of the Cornish

[19] P 44.

[20] *I.e.*, on the report of Dr. Barham.

[21] P. xxv.

[22] 'Leisure Hour,' 1879, pp. 169, &c.

[23] 'Encyclopædia Britannica,' 9th edit., 'Cornwall.'

[24] Sir Warington Smyth, in a lecture at the Royal School of Mines, is reported to have observed that the men who worked for daily pay in Cornwall were called 'owners' account-men,' and were regarded by the other miners with some contempt.

miner's work. It may be true, as a witness stated[25] before Lord Kinnaird's commission, that a tut-worker experiences difficulty in working at tribute, and a tributer does not care to work at tut-work; although we have to set against this the fact that, among the cases of accident and illness into which the doctors appointed by the commission made inquiry, there appear[26] to have been many instances of men who had worked under both of the two systems. It may also be true that the speculators, who in 1827 took out[27] parties of Cornishmen to work at the mines of South America and Mexico, wilfully shut their eyes to the fact, that 'a copperer is not a tinner.' But there can, on the other hand, be little doubt that as a rule a Cornish miner is less of a specialist than a coal or iron miner, that he generally can, if necessity require, sink a shaft, or winze, or drive a level, or stope a pitch, and that he has more occasion for the employment of his resource and intelligence, because his work is more varied in character. Dr. Foster, for example, in his evidence before the commission appointed to inquire into accidents in mines, stated[28] that each man was 'expected' in the Cornish mines to 'learn the art of setting timber,' and that the 'miner, as a rule,' timbered 'his own working place.'

But by far the greater amount of the intelligence of the miner may be fairly ascribed to the system under which he works. The correspondent of the 'Daily News' in 1885 notices[29] the 'effect' which his 'very calling has in developing' his 'intelligence;' and Mr. John Taylor maintains that to 'the habits of investigation induced by the plan of payment may probably be attributed a great deal of the intelligence observed among the Cornish tributers.' The system in fact is one—and this, as the passage we have last quoted indicates, is especially true in the case of tribute—which 'teaches the miner to live by his wits.'

To some extent, indeed, it is true of the tut-worker, and also of the 'kind of tributer,' who, as we have said,[30] may be regarded as occupying an intermediate position between tutwork and tribute. Of these latter workmen indeed, who receive a certain payment per ton of mineral extracted, a witness declared[31] before Lord Kinnaird's commission that 'they depend quite upon their own

[25] K., Q. 5046.

[26] Appendix B, parts i and ii, *passim*.

[27] *Cf.* 'Quarterly Review,' vol. 36, p. 85.

[28] Report, Q. 4149 and 4273. Dr. Foster added that there were also special timbermen, who would be employed when an amount of work unusually extensive was needed.

[29] 17th September.

[30] *Supra*, chapter v.

[31] Q. 8735.

resources.' If they 'break down "deads,"' he remarked, 'instead of tin, they get nothing for it. They are confined to breaking tin-stuff that will pay for stamping when it is brought to the surface.' So too in the case of tutwork, as another witness before the commission, hailing from the north of England, remarked,[32] the men may sometimes find that the bargain turns out well, and sometimes also that it turns out ill.

The tut-worker, however, may proceed to some extent by rule, and the 'kind of tributer' may be said to speculate chiefly on the probable yield of the lode in quantity; the ordinary tributer on the other hand speculates in a fuller degree on its quality, and also on its probable price, and has therefore in a peculiar measure to exercise his powers of conjecture. In an undertaking, which is confessedly of so speculative and deceptive a character as tin or copper mining, he has to judge by appearances whether the pitch is likely to turn out well or ill. He has, then, in a very real sense to speculate on the future, and has been not inaptly described as a 'kind of subterranean stock-jobber.' The description derives support from the language of a witness before a Parliamentary committee in 1887, who declared[33] that the Cornish tributer was 'to some extent an adventurer himself,' and from the significant observation[34] of a correspondent of the 'Daily News' in 1879, to the effect that the tributer enjoyed the 'excitement of gambling.'

This speculative character has, it is true, its drawbacks, and it may be doubted to what extent the system encourages thrift. It is true that the miners, like the members of co-operative distributive societies, receive sums of money in the lump,[35] and may therefore in some sense be said to be tempted to save. It is true, again, that the system may lead them to look forward for a month or a longer period. But it may also engender—in some measure at least under its form of tribute—a hazardous venturing of all on the doubtful issues of the future; and it is hardly without significance that some of the evidence given[36] before Lord Kinnaird's commission tended to show that the majority of those who had houses of their own were tut-workmen rather than tributers.

Nor indeed can the general system—whether of tutwork or tribute—be proved to be very influential in encouraging thrift.[37]

[32] *Q.* 13928. [33] S., *Q.* 33. [34] 14th January.
[35] *Cf.* S., *Q.* 1143 and 1531. [36] K., *Q.* 10510, *cf. contra*, 9174.
[37] The men may indeed, and sometimes do, check their bal-bills by keeping their own accounts (*cf.* S., *Q.* 850 and 4836); but complaint has been made that

It is true that as large a proportion as a quarter of the population of Camborne were alleged[38] before Lord Kinnaird's commission to 'live in houses which' were 'the property of labouring miners;' but the commissioners themselves state[39] that the 'general practice in Cornwall is to let ground for building on leases of 'three lives,' and the three-life system can hardly be described as being of anything else than a speculative character, especially when the lives of the miners themselves, which are abnormally brief, are inserted[40] in the lease.

It is also true that the prices at which the materials have been supplied to the men in the mines have hitherto been generally above the cost price, in order, as one witness stated,[41] to 'make' the men 'economical,' and, as the commissioners themselves remarked, to 'prevent' them from 'wasting or selling.'[42] In

on some bills the various items are not specified with sufficient detail to enable this to be effectually done: that the headings of 'sundries' and 'etceteras' are capable of an elastic comprehension, and that the methods of computation adopted by the agents are not always intelligible with ease and rapidity (S., *Q.* 3477, 3485 and 3486, and 3803–16). The Stannaries Act of 1887, however, makes special provision for this.

[38] *Q.* 10331. *Cf.* S., *Q.* 1142. It has been also alleged that these purchases have been made out of foreign earnings. (*Q.* 1869, 2541, and 5063.) The three-life system seems to be falling into disuse as the leases run out.

[39] P. xxv. *Cf.* 'Report on Housing of Working Classes,' *Q.* 7930 and 8078.

[40] Ibid., *Q.* 8079.

[41] K., p. xxiii, *Q.* 9063. *Cf.* *Q.* 7849, 8627, 8762. The same practice of making deductions, and *sometimes* of charging more than the cost-price, was found to prevail in the north. *Q.* 13633, 13830, 17374, and 17437. To give some idea of the extent of the profit thus made by the mines, *cf.* the following table based on one prepared for Lord Kinnaird's commission. (*Cf.* Report, Appendix B, xi, p. 436.)

TABLE B.

Mine.	Quantity of Candles consumed in a year.	Price per lb.		Profit.	Quantity of Powder.	Price per lb.		Profit.	Total Profit.
		Cost.	Sold.			Cost.	Sold.		
	lbs.	*d.*	*d.*	£	lbs.	*d.*	*d.*	£	£
Dolcoath . .	51,000	5½	8	531	35,350	6	8	294	825
Huel Clifford .	63,936	5½	7	399	29,000	6	8	241	640
Par Consols .	51,086	6	8	425	63,445	6	8	528	953
Prosper United	96,000	5¾	7	500	27,600	5½	6	57	557
	262,022	—	—	1,855	155,395	—	—	1,120	2,975

The total profit shown by the Table was £24,881 17*s.* 0½*d.*

[42] The materials, which are not used, are returned to the store, and credited to the taker at their full value—in the case of the powder and candles, at the price charged, according to the value, in the case of the shovels, saws, or axes

foreign mines, however, it seems that in some cases no such deductions as those known in Cornwall are made, but the materials are supplied without charge by the shareholders.[43] In others they are made, but the cost price alone is charged, or, it may be, a little more, to defray the expenses of carriage.[44] Even in Cornwall itself the reason alleged for the higher price—however effective it may, or may not, have been in the past[45]—is said now to be seldom realised in fact;[46] and before a Parliamentary committee of 1887 one witness declared[47] that the materials might easily be charged at cost price. Another mentioned[48] as a reason for the change the fact that, should the ground unexpectedly prove unfavourable to a miner, his burden would be appreciably increased by the higher price of the materials, although, as it was variously contended, this disadvantage might,[49] or might not,[50] be taken into account when the next contract was set, and the practice might also result in advantage to the men, if the ground proved more favourable than they had originally anticipated.[51] But, whatever be the truth of these contending arguments, the Stannaries Act of 1887 provides for the approximation of the price charged to the cost price; and the previous arrangement, though it might indeed have resulted in thrift, is scarcely to be cited as evidence of the possession of that quality.

Nor must we forget to notice in this connection that chronic indebtedness of the miners to the local shopkeepers to which we have before alluded, although we must also in fairness set against this the fact that Dr. Barham, in the report to the Children's Employment commission to which we have already referred,[52] stated that £281,541 were deposited in savings banks in Cornwall, and that 'two thirds' of this sum were supposed to belong to the miners.[53] And with this we may compare a statement of the correspondent of the 'Daily News,' who visited Cornwall in 1879 at a time of deep distress in the mining and fishing industries—'the fish, tin, and copper' of the county toast. He declares

(*cf.* S., Q. 1157 and 1158). The item of 'smith's cost,' it may be noticed, apparently includes a charge for the difference in the weight of the tools between the time when they are taken and the time when they are brought back. (S., Q. 1183, 1184.)

[43] S., Q. 2761, 3303 and 3304; *contra*, Q. 253, 5620 and 5621.

[44] S., Q. 3167.

[45] S., Q. 3487 and 5018.

[46] S., Q. 591, 4089, and 4836.

[47] S., Q. 5256 and 5257.

[48] S., Q. 2705, &c. *Cf.* Q. 3821 and 4085.

[49] S., Q. 547 and 548.

[50] S., Q. 5256 and 5257.

[51] S., Q. 2722.

[52] *Supra*, note 20.

[53] *Cf.* 'National Distress,' p. 41.

emphatically that the Cornish 'abhor pauperism,'[54] and 'despise parish relief.'[55] 'They shrink,' he adds, 'from the taunt of pauperism as they would from the plague.'

But, while the encouragement afforded by the system to habits of thrift is, as we have maintained, at least open to argument, its influence on the intelligence of the workman cannot be doubted. And for this reason alone it is likely to result in the maximum of output. But there is also, as we have noticed, an additional reason; and that is to be found in the interests of the workmen. This, again, is more especially the case with regard to tribute. For by means of this practice unpromising parts of the mine, which otherwise would never have been worked, are taken by venturesome miners. Sometimes they succeed and make a 'start,' as it is called; and then they reap a fortune. Sometimes they fail. But, whatever be the luck of the miners, the result to the adventurers is that the mine is worked. And thus in some answers received from practical miners to questions addressed to them by the author of 'British Mining,' we find the instructive statement[56] that poor mines might be worked 'for many years on tribute,' paying their cost and 'making more or less profit,' while they could not exist for six months without incurring a heavy loss, if worked on tut-work.

[54] 'Daily News,' 8th January, 1879. [55] Ibid., 14th January.

[56] P. 864. *Cf.* also 'Daily News,' 14th January, 1879, where it is said that the system 'enables' the owners to employ men 'in bad times.' *Cf.* K., Q. 2235.

CHAPTER VII.

Disadvantages and Abuses.

The Cornish system, it is true, is open to abuses, and has its disadvantages; but in considering its drawbacks, as in discussing its merits, we must endeavour to ascribe to the system itself only that which fairly attaches to it. There are abuses connected with it, as indeed with all other systems. The tut-workers may put in faulty timbering; and the tributers—although it may seem to be scarcely to their interest to do so—may send comparatively worthless material to the surface. This is said to be the reason for the 'returning charges'—as they are called—which are imposed[1] at a certain rate per ton, varying according to the quality of the stuff. The 'hauling charges,'[2] again, with which the tut-workmen are sometimes debited, are said to be levied for a similar reason, save that in this case it is the amount of rubbish, and not the poor quality of the ore, which is in question.

The tributers once more may unintentionally leave small portions of rich ore behind them, or conceal it beneath the rubbish or deads; or they may be guilty of intentional fraud. Two of them may secretly agree to share their ores, if the one has a pitch which turns out poorly, and the other has one which promises well. They may both work when they can at the promising pitch, and produce indeed the maximum of ore. But, should it have been granted on relatively higher terms by the captain, they gain, and the adventurers lose, by the fraud, for the pitch would otherwise be let on more unfavourable conditions at the next setting day. Or, again, they may consciously endeavour to conceal a promising part of the lode by placing rubbish above it, and may thus secure its being set on more favourable terms.[3]

Some of these abuses may be ascribed to the special system of

[1] S., *Q.* 517, 726, 1164 and 1165, and 2023. [2] S., *Q.* 523-25.
[3] *Cf.* K., *Q.* 3153 and 3549, and 'Penny Magazine,' 27th December, 1834.

tribute, and will receive our attention later; but many of them are of a minor character, and would probably occur under any system. It is, then, with considerable truth that Mr. John Taylor remarks that the chances of fraud are 'in fact under intelligent and faithful agents of too trifling a nature to be accounted of any importance;' and it is precisely to prevent these abuses that the captains, who have invariably been miners themselves, are appointed.

Again, there can be no doubt that the mortality among the Cornish miners must be characterised as excessive. But it would be a mistake to attribute the whole of this mortality to the system under which the mines are worked, although, as we shall see later, the causes, which affect the rate of mortality, exercise also a curious special influence on the respective classes of tut-workers and tributers. The general question, too, has some indirect connection with the system of working the mines. As Lord Kinnaird's commission stated,[4] 'the mode of working in the mines and the wages of the miner' might 'at first sight' 'appear to be foreign' to the inquiry into his health and safety, with which the commissioners were concerned; but they did as a matter of fact 'substantially' affect the questions they had to investigate.

The mortality is, as we have said, excessive. Lord Kinnaird's commission, after remarking[5] that 'it may be affirmed as a general proposition that the health of the copper, tin, and lead miners as a class, is greatly inferior to that of labourers engaged in agricultural and other open air employments,' proceeds in strict accord with this remark to state that the 'delicate condition' of the Cornish miners 'is the more striking when contrasted with the vigorous health generally presented by the women and children in the same districts.' But we may unfortunately go further than this. It may at first sight seem surprising that statistics should prove that the greatest danger the miner has to confront is not that of explosions.[6] And yet explosions in the sense in which they are known in coal mines are foreign to Cornish mining;[7] while on the other hand the rate of mortality among the Cornish miners is in excess of that among the colliers in any

[4] P. vii. [5] Pp. viii and ix.

[6] *Cf.* Mr. Frecheville's Report, April, 1886. *Cf.* also Dr. C. Le Neve Foster on 'Mining' in 'Encyclopædia Britannica,' and his paper read before the British Association, 1884. (*Cf. Statistical Journal*, vol. xlviii, part II, June, 1885, pp. 277-79.)

[7] There is indeed a dangerous inflammable gas, but it is rarely found. S., Q. 363. Accidents occur also from the employment of dynamite in blasting operations.

district of England. The death-rate from accidents, indeed, was less in Cornwall and Devon for the ten years extending from 1874 to 1883 than it was among the coal miners. But, if we include in our estimate the mortality from *all* causes, we find that in the ten years 1871–80 Cornwall headed the list, and more than doubled the rate among the colliers. And here the reports prepared by the two doctors, who were appointed by Lord Kinnaird's commission to inquire into this excessive mortality, may be cited as bearing corroborative testimony;[8] for the sanitary condition of the mining population was described by them as 'very defective.' 'It is a common remark in Cornwall,' the commissioners themselves stated, that 'a person of 50 is old for a miner;' and some statistical tables of comparative rates of mortality prepared for them by Dr. Farr showed that in other mining districts the mortality amongst the miners was less than that of the males generally in the corresponding area, but that in the case of the Cornish miners this relation was reversed.

The following table, which is based on two tables supplied[9] to the commission, will illustrate this point, and will also indicate the comparative excess of mortality among the Cornish miners as contrasted with that among the northern colliers, to which we have already called attention. The time, to which the table relates, is the period between 1849 and 1853.

TABLE IX.—*Average Annual Number of Deaths per* 1,000.

Ages.	Cornish Miners.	Northern Coal Miners.	Males in Cornwall.
15–25	8·90	8·50	7·12
25–35	8·96	8·49	8·84
35–45	14·30	10·13	9·99
45–55	33·51	16·81	14·76
55–65	63·17	24·43	24·12
65–75	111·23	65·16	58·61

It might at first sight seem that a plausible explanation of this excessive mortality could be found in the extensive emigration which has proceeded from Cornwall. The numbers of the Cornish miners appear to have decreased some 34 per cent., as we have seen, between 1871 and 1881, and 27 per cent. between 1861 and 1871; and the emigrants would naturally include the youngest and most healthy, who might return in their old age to die at home. But the validity of this hypothesis is discounted by the

[8] *Cf.* Report, p. ix.

[9] *Cf.* pp. x and xi.

facts that the excessive mortality dates back to a time anterior to the emigration, and that the diseases to which it is chiefly due are those of phthisis and the respiratory organs.[10] 'The cases of disease,' remark[11] the doctors appointed by Lord Kinnaird s commission, are 'chiefly asthmatic affections, resulting from bronchitis, pneumonia, and disease of heart, and more rarely true tubercular consumption.' 'Rheumatic disorders,' they add—and we shall see the bearing of this later—'and various dyspeptic symptoms are of common occurrence.' This point will be illustrated by another table contained[12] in the report of the commission :—

TABLE X.—*Average Annual Number of Deaths per* 1,000 *from Pulmonary Diseases,* 1860–62.

Ages.	Miners.	Males in Cornwall, Exclusive of Miners.	Ages.	Miners.	Males in Cornwall, Exclusive of Miners.
15–25 .	3·77	3·30	45–55 .	19·75	4·34
25–35 .	4·15	3·83	55–65 .	43·29	5·19
35–45 .	7·89	4·24	65–75 .	45·04	10·48

According to the registrar-general[13] again, the Cornish miners suffer from phthisis and diseases of the respiratory organs more than three times as much as Cornish males, and more than twice as much as the miners in any other great mining district. They also, he—like the doctors appointed by Lord Kinnaird's commission—adds, 'suffer from diseases of the digestive organs, but,' he goes on to remark, 'are little affected by diseases traceable to alcohol.' Indeed, with regard to this last point, the commissioners themselves declare[14] that the 'miners as a class are well conducted and temperate. Large numbers have taken the pledge, and kept it, and, whatever may be the causes of the diseases to which they are liable, the habit of intoxication cannot be assigned as one of them.'

What, then, are the causes of this excessive mortality? Partly, no doubt, it is due to the character of the food[15] the miners habitually eat—to its lack of nutritive qualities, and to the hin-

[10] *Cf.* Registrar-General's Report, 1885, Forty-fifth Report, especially Dr. Ogle's Report, p. liv in supplement. Dr. Ogle states the decrease of the miners between 1871 and 1881 as 44 per cent.

[11] *Cf.* p. ix. [12] P. xiii.

[13] Report, 1885. *Cf.* the term 'miner's complaint,' which is commonly used. S., *Q.* 3317.

[14] P. xxv, also *Q.* 3297 and 10152. *Cf.* also S., *Q.* 763 and 5662.

[15] Especially the 'pasty.' *Cf.* Appendix B, i, p. 5. *Q.* 3714.

drances it presents to digestion; and this fact was expressly noticed by the commission as a cause of the dyspeptic symptoms we have mentioned above. Partly also it is due to the carelessness of the men, and especially to the practice of racing up the ladders which is common among the younger miners; and here again the commissioners remark[16] that the evil effects of climbing are 'aggravated by the indiscretion of the miners themselves, especially the younger men, in mounting the ladders with too much haste.'

But in mentioning this last fact we have alluded to one of the primary causes. It is not the racing, but the mere necessity of climbing these ladders, which affects so seriously the vitality of the men. The doctors, for instance, appointed by Lord Kinnaird's commission enumerated[17] as causes of the unhealthy condition of the miners the 'early age' at which they then commenced work, the 'impurity of the air,'—the heated, draughty, and damp atmosphere in which the labour was too frequently carried on—and 'the severity' of their exertions, 'especially in deep mines, where ladders' were 'the only means of access.' 'The exposure to cold and damp at the surface or in the shafts, and other parts of the mines,' was, they maintained, 'the most frequent exciting cause of disease,' 'operating with peculiar severity upon men in a state of perspiration or exhausted by working in close places,' or by ascending 'ladders from great depths.' The commissioners themselves similarly declared[18] that the 'method of descent and ascent' 'by means of ladders,' which was 'almost universal' in Cornwall and Devon, 'caused a great waste of time and strength to the miner, who in many cases' worked 'at a depth' below the surface 'of from 200 to 280 fathoms.' There were 'mines,' they stated, 'at which not less than three hours' were 'expended by the miner in going to and returning from his work.' 'The evidence' to which they had listened left 'no doubt on' their 'minds as to the pernicious effects' of the 'severe climbing;' and they strongly recommended[19] the introduction of man-engines or some other mechanical contrivance for raising and lowering the men. Fifteen years later than this, however, we find Dr. Foster, in his evidence before the commission on accidents in mines, employing similar language, and declaring[20] that the 'heavy work of ascending and descending' the 'ladders' does 'undoubtedly' cause 'suffering to the men.' In the following year the report of Her Majesty's inspector draws[21] attention to what is described as the 'disgrace-

[16] Report, p. xliii. [17] Pp. ix and x. [18] P. xiv.
[19] P. xliii; and also *Q.* 3448, 3525, and 3732, in fact *passim.*
[20] Report, *Q.* 4297. [21] Mines Inspectors' Reports, 1880 and also 1881.

ful supineness' of the Cornish companies in the matter, and characterises their attitude as one of 'surprising apathy.' Nor even now is it any exaggeration to say that a very considerable portion —if not the greater part—of the going up and down appears to be done by means of ladders.

It is true that Mr. Frecheville in his report of 1882 stated[22] that more attention had been given of late to the question of raising the men by means of such machinery as cages or 'gigs.' It must be admitted also that in the adoption of man-engines some hindrance and difficulty are occasioned by the fact that some of the shafts are sunk in an oblique instead of a perpendicular direction.[23] And this, coupled with the fact that the same single shaft does not go down to the bottom of the mine, is partly the reason why in some of the mines, where man-engines have been erected, the men are relieved of only a part, and not of the whole, of the climbing. In Dolcoath, for example, Dr. Foster stated before the commission on accidents in mines that the bottom of the mine was 352 fathoms deep,[24] but the man-engine did not go lower than 240. In Carn Brea the man-engine went down to 170 fathoms, but the mine itself was worked to nearly twice that depth; and in Cook's Kitchen the man-engine descended to little more than a third of the depth of the mine.

But, after we have made abundant allowance for all such considerations, the comparative absence of mechanical contrivances might well awaken surprise, and was noticed by Mr. Frecheville in 1886 as a cause which had not ceased to help in producing an 'appalling excess of mortality.' In the following year again, a Parliamentary committee, employing language with which we have now become painfully familiar, alluded[25] in its report to the 'excessive mortality' of the Cornish miners; and evidence given[26] before this committee might be effectively quoted as showing that man-engines, or other mechanical contrivances, were still far from being universally adopted. And yet some twenty years ago or more facts laid[27] before Lord Kinnaird's commission—facts which were not contradicted—undoubtedly tended to prove that the introduction of the man-engine had been followed by manifest improvement in the working capacity of the miner, and that in the majority of cases the initial cost was more than outweighed by the saving effected in physical wear and tear.

[22] *Cf.* Report 1882, and also S., *Q.* 5774.

[23] S., *Q.* 714.

[24] *Q.* 4192. S., *Q.* 1856.

[25] S., p. v, *Q.* 707.

[26] S., *Q.* 709-713 and 4902.

[27] K., p. xliii. *Q.* 3734-41, 3844, 5247, and Accidents in Mines Commission, *Q.* 4297.

In addition to the causes of mortality on which we have been dwelling, Lord Kinnaird's commission gave[28] prominence to the indifferent ventilation of the mines, and the absence of dressing rooms close to the shaft. The miners had 'frequently to walk considerable distances to the place where they changed their clothes,' 'the changing houses' were 'too often far from the footway shafts,' 'and ill adapted to their purpose.' Here again the lapse of time has brought with it undoubted improvement,[29] and the Metalliferous Mines Regulation Act of 1872 expressly dealt with evils like these. But nevertheless, so recently as 1879, Dr. Foster maintained[30] that the ventilation in the mines, though it had been rendered more thorough owing to the provisions of remedial legislation, was yet 'not as good as it ought to be;' and the 'Mining Journal' of the 7th of August, 1886, added to a report of the opening of a new changing house at Dolcoath the significant commentary that there was 'room for improvement in the changing houses' in Cornwall.

These defects may perhaps in some measure be ascribed to the fact that the adventurers, who are the proprietors of the mines, do not come into actual contact with the miners, but form an absentee corporation. They are therefore presumably subject to the failing attributed—not without exaggeration—to corporate bodies, of possessing no conscience. There is no resident employer to encounter the indignant assault of public opinion, if indeed there be upon these particular points a sufficiently pronounced public opinion at all. And so Lord Kinnaird's commissioners declare[31] that, while they have reason to believe that the agents and managers 'are by no means insensible' to many of these 'defects,' and, while they 'are confident that as a body' they are anxious to promote the safety and comfort of the men, and that in 'established and well-managed mines,' which are 'conducted with a view to the legitimate development of the mineral property,' attention is generally given to their 'recommendations,' yet there is only too much reason to fear that this is not the case in mines of a 'more speculative character,' where every 'outlay beyond what is absolutely necessary is avoided,' because it would tend to 'diminish the dividends,' and to 'depress the price of the shares in the market.' And we may place beside

[28] Report, pp. xv and xxii and, in fact, *passim.*

[29] S., Q. 4889 and 6120.

[30] *Cf.* Report of Commission on Accidents in Mines. Q. 4248 and 4249. *Cf.* S., Q. 5783.

[31] P. xxii, Q. 3134.

this statement the words of a witness before the commission, who remarked significantly enough that the division of responsibility between the various shareholders was calculated to increase the evils we have noticed, and that the constant changes of the shares prevented the miners from ascertaining the identity of the adventurers, and fixing the responsibilities of ownership.

So far, then, as the system of wages in the mines is connected with the absence of a resident employer—and a salaried captain, we must remember, may conceivably prove but a sorry substitute for a responsible owner—and so far as the formation of an union might enable the men to insist on the provision of such healthy conditions as may be found to be possible, there is some reason for charging to the account of the system a part of the excessive mortality. But it would be manifestly unfair and illogical to make it responsible for the whole.

In the same way we must endeavour to separate the system, as far as justice may require, from the fraud and abuses, which have too frequently contributed to make Cornish mining a by-word. It has sometimes been remarked that Cornish mining as a whole results in loss,[32] and that more money finds its way into Cornwall than comes out of that county; and there can unfortunately be no doubt that grave abuses have sometimes attached in the past to the management of Cornish mines, and that they have on occasions presented a favourable sphere of operation to the swindler and the cheat. There is only too much reason to fear that the speculative character, which naturally attaches to metallic mining, has sometimes been intensified with deliberate and evil intent; and Fawcett, who is said by[33] his biographer to have engaged for a time with surprising success in speculation upon the mining exchange, was very severe in his denunciation of fraudulent speculators.

There can be little doubt that the accounts presented at the four-monthly meetings of the 'adventurers' may have been sometimes manipulated by the treasurers, or 'pursers,' as they are called; and legislation, which has been recently enacted,[34] is

[32] *Cf. Statistical Journal*, 1839, vol. ii, pp. 260-68. In 1837 the mines applied for the abolition of the duty paid to the Duke of Cornwall, and furnished a statement exhibiting a net loss on sixty-eight mines of £60,159. This was, however, it seems, a 'peculiarly unprofitable' year.

[33] *Cf.* 'Life of Henry Fawcett,' by Leslie Stephen, p. 202.

[34] *Cf.* 'Western Morning News,' 31st December, 1886; 'West Briton,' 17th September, 1885, and 3rd January, 1878. The Stannaries Act of 1869 provided for the keeping and presentation of regular and correct accounts. But it attached no penalty to neglect of the provision, and in some cases the meet-

directed towards securing greater correctness and more frequent and certain publicity in these accounts.

There can be little doubt, again, that the reason, which is sometimes alleged for the continued working of mines at a loss, has had some foundation in fact, and that some adventurers may have recouped themselves for the constant calls that have been made upon them as adventurers by means of the sums they have received for the materials—the candles, for instance, and the powder—which they have supplied as merchants.[35] It may have been then to their real advantage that the mines should continue to work at a loss, although the other adventurers, without any like compensation, have been compelled to respond to constant drains upon their resources. The distinction drawn[36] by Pryce between the 'in-adventurers,' who lived in the district and often supplied the mines with materials, and the 'out-adventurers,' who did not do so and resided at a distance, is not devoid of instructive meaning; and the 'Mining Journal' of 1836 contained[37] a series of articles directed against the exorbitant charges of the merchants, while the same paper some half a century later noticed[38] the formation of a dynamite 'ring' designed to maintain the price of that material.

The possible extent of this influence may be in some degree measured by the space occupied by merchants' bills in statements of accounts. At Dolcoath, for example, on the 6th of December, 1886, it was reported[39] that the total expenditure for the previous twelve weeks amounted to £19,413; and out of this sum £5,572 were spent on merchants' bills, as against £11,607 on labour, and £1,673 on tribute. At Wheal Kitty during the sixteen weeks preceding the 3rd of December, the total expenditure amounted to £3,442, and this sum included an item of £978 for merchants' bills.[40]

ings themselves seem to have been postponed for fraudulent ends. (*Cf.* S., *Q.* 73 and 77.) The Stannaries Act of 1887 contains express provisions for effectively securing these desirable objects.

[35] *Cf.* 'Quarterly Review,' vol. 36, p. 104.

[36] P. 174. *Cf.* correspondence in 'West Briton,' 11th January, 1867, complaining of the presence of merchants on mine committees.

[37] Especially 2nd January and 3rd December.

[38] Ibid., January, 1885. Before a Committee of the House of Commons in 1887 a witness spoke (S., *Q.* 62) of the 'gentlemen who supply machinery to mines' living 'in Cornwall and Devon,' and a captain said (*Q.* 657–62) that his own sons sold materials to the mine of which he was agent, although indeed he added (*Q.* 823) that his position in this respect was 'exceptional.'

[39] 'Western Morning News,' 7th December, 1886.

[40] *Cf.* 'Western Morning News,' 4th December, 1886.

The operation, again, of the 'cost-book' system, by which it has been difficult, if not impossible, for an adventurer to ascertain the exact value of his share at any particular time, because on the one hand his liability has been unlimited, and on the other he, or one of his fellow adventurers, has had the power of relinquishing his share at any moment, seems at first sight to have been peculiarly exposed to fraudulent devices, and to have necessarily tended to heighten the speculative nature of the industry. It must not, however, be forgotten that the system is connected theoretically with the practice of frequent meetings, and that thus—unless this latter provision be violated—the liberty of action of the purser is controlled, and the risks of unlimited liability are appreciably lessened.

By itself, however, without any such adventitious accretions, metallic mining is proverbially a lottery, although the lapse of time and the growth of knowledge have to a large extent replaced the divining rod and mere rule of thumb by experience and foresight. Attention has been recently drawn to the action of a French syndicate in the tin and copper markets. For a time that syndicate was conspicuously successful in raising the prices of those two metals; and indeed it appears that the general rise of prices, which seemed towards the close of 1887 to indicate a recovery from the steady fall of the previous thirteen years, was due in no small measure to the sympathetic effects produced upon the prices of other articles by the manipulation of the tin and copper markets. But the sudden and excessive rise in tin thus produced was followed by an equally sudden and excessive fall; and the brief period of a single month witnessed a drop in prices from £166 to £86.

Nor is this history without its parallel in Cornish mining. The tin corner of 1871 and 1872 was accompanied by similar phenomena. Then, as now, there were rumours of 'most unaccountable transactions in the market;' then, as now, it was reported that the market was 'greatly disturbed by the operation of speculators;' then, as now, we heard of the tin supplies going 'into strong hands' 'well accustomed to manipulate the market to their own advantage.' But it was also the case then, as now, that an extraordinary rise was followed by an excessive fall. Then, as now, the supplies of tin were increased; and the Australian discoveries, assisted by the emigration of miners from Cornwall, severely tested the endurance of Cornish mining through the weary years of depression which followed.

It is worth while to recall a few of the more salient points of

the history of that episode of 1871–73. In December, 1871, the London 'Economist' noticed, as one instance of the 'great rise' in the price of commodities by which the year had been marked, the fact that in January tin was selling at £137, and in December at £157. The 'Mining Journal' of the same date pointed out that the shares in the Devon Great Consols mine had advanced during the year from £90 to £140, those in the Cook's Kitchen mine from £18 to £45, and those in the Carn Brea mine from £18 to £50. The 'Times' of the 2nd of December declared that tin mining was 'going ahead at a tremendous pace;' and by the close of the following year the 'Mining Journal' was able to assert that the tin standard had advanced rapidly to an almost unprecedented figure. The 'excitement' prevailing in Cornwall itself was characterised as 'feverish,' and a local paper stated that opportunities for dealing in mining shares were presented in hitherto unfamiliar quarters of Cornish towns.

But this year of 1872 was one of general abnormal good fortune. It was a year at the beginning of which Mr. Childers had described the commercial position of England as unprecedentedly prosperous, and had said 'that he had failed to find even a farmer who grumbled.' 'It did not require,' remarked the 'Mining Journal' at a later time, 'any very great degree of penetration to discover that things were too good to last, and that the unreasonable excitement must give place ere long to an equally unreasoning depression.' And accordingly the year 1873, which called forth at its opening the observation that it was long since a new year had opened so auspiciously for the mining interests of Cornwall, was marked at its close by a drop of £24 in tin, attributed in a large measure to the effect of the considerable Australian discoveries.

Even, however, in comparatively normal times—without the interference of either corners or syndicates—we find such cases as that by which the market value of Dolcoath was said to have advanced some £273,138 in a single year; and in the same year—that of 1886—the aggregate value of all the Cornish mines was stated to have increased to the extent of three quarters of a million. One year the newspapers despondently declare that there is only one dividend-paying mine west of Camborne, and not one east of Redruth; in the very next year they jubilantly exclaim that 'Cornish mining' is 'in a better position than it has' been 'for many years.'[41]

[41] *Cf.* local papers of 1885 and 1886.

This speculative character presents opportunities for fraud, and tends to promote indifferent finance. The adventurers are in a similar position with regard to economic prudence to that in which, as we have seen,[42] the tributer is placed with reference to thrift. Even without any conscious dishonesty the mines, if we may credit the statements of local and trade newspapers, have been too frequently worked on unsound financial principles. In some cases it seems that almost every penny of available money —and sometimes too, it is to be feared, of money, which is not strictly available—has been divided at the periodical meetings, and little, if any, set aside to meet unforeseen contingencies. Nor is it without significance that attention has recently been called in Cornwall to the high charges imposed for banking accommodation; and that the failure of Tweedy's Cornish Bank in 1879 disclosed the existence of large over-drafts to the mines.[43]

But we must dismiss these abuses from our minds when we are considering the system of wages. Nor again must we be drawn away by the controversy, which has recently arisen around the questions of royalties and the leases of mines. Here once more there *appear* to have been grievances, and here too remedial legislation is proposed. The incident of the payment of a large fine[44] on the renewal of the lease of Dolcoath has brought the question to the front; and complaints have been raised about the brief duration of the leases and the payment of royalties. It has been urged[45] that the leases should run for a longer time than twenty-one years, and that the dues to the lords[46] should be paid

[42] *Supra*, chapter iv.

[43] *Cf.* 'West Briton,' 13th February, 1879; 'Daily News,' 8th January, 1879. The receipts have sometimes been brought in up to date, while the expenditure has not been similarly treated.

[44] *Cf.* Royal Commission on Housing of Working Classes' Report, *Q.* 8051, 8164, and 8165, and 'West Briton,' 24th December, 1885. The sum said to have been asked at first was £98,000, then £45,000, and finally £25,000.

[45] It is curious that as far back as 1814 Mr. Taylor declared (Geological Transactions, vol. ii. p. 213) that the 'mode of levying dues on the gross produce' tended 'to discourage enterprise.' 'It seems reasonable,' he added, 'that the land-owners should contribute something in favour of that exertion which so often leads to their great advantage;' and he therefore advocated some mode of assessing dues, if possible, 'in some proportion to the *net profit*.'

[46] 'The owner of the fee simple, who grants the lease for mining purposes, is locally known as a lord,' 'whether it be a manor or whether it be not' (S., *Q.* 65). The dues may vary from 'one-eighteenth to one-thirtieth' of 'the value of the ore actually sold' (S., *Q.* 176-79, and 5763 and 5764). In 'some recent leases' a 'small annual rent' is also introduced, but this is so small that it really 'merges in the dues' (S., *Q.* 198). At Dolcoath these dues

on profits alone. Royalties and mine leases are then a burning question; but they are not the question with which we are at present concerned.

To a certain extent another abuse, which is intimately connected with the speculative character of the mines, is relevant to our subject. Some local discussion recently arose on the question whether greater effect should not be given to the provision of the Stannaries Act of 1869,[47] that the wages of the miners should constitute the first charge on mining effects; and complaint has also been raised from time to time about the disposal of the monies of the miners' clubs. These, it has been urged, should be regarded as the property of the men, and not of the adventurers. Before Lord Kinnaird's commission, however, evidence was given,[48] which tended to show that separate accounts of the club money were 'not always kept,' and that in the event of the abandonment of a mine the club funds were 'added' to the general assets, and 'divided among the adventurers.' By more than one witness, indeed, the practice was justified on the ground that a deficit in the club money would have been similarly made up from the general account, and that a just distribution among the several contributors would have proved practically impossible.

Now there can be little doubt that the probability that the miners might be deprived of their wages,[49] and the practical certainty that they would lose their club money in the event of the failure of a mine, were in some degree connected with the system of payment. For it must be remembered that habitually the miners have only been paid once a month—or at even longer intervals—and that their wages have generally been a month in arrears. Here again legislation has been proposed and enacted[50] with the object of securing a more frequent payment, and of diminishing the period of arrears. The same legislation naturally lays down the important principle that the mine club monies shall be held to belong to the men, and not to the mine, supposing

amounted for the twelve weeks prior to the 6th of December, 1886, to £2,219 on £33,290 realised by 556 tons 16 cwt. of tin (*cf.* 'Western Morning News,' 7th December, 1886).

[47] This priority seems to have been prejudicially affected by the Companies Act of 1883, and has been restored by the Stannaries Act of 1887 (50 and 51 Vict., cap. 43). *Cf.* S., *Q.* 42, 43, and 56-58, *contra*, *Q.* 4486.

[48] P. xxiv. *Cf.* S., *Q.* 111, 828, 829, 3311, and 4673; *contra*, *Q.* 1130 and 1374. For the character and objects of these clubs *cf.* note 74, in chapter iii.

[49] For an instance, *cf.* S., *Q.* 902, 3100 and 3261.

[50] *Cf.* Stannaries Act, 1887, secs. 11 and 13.

that they are contributed by the men, and that the opposite course does not meet with the approval of a majority of their number. A separate account is to be kept of the club money, and this account is to be open, not only to the adventurers, but also to the miners, who are invested with the power of appointing auditors, and of selecting their own doctors.

The change, indeed, from a longer to a shorter interval of payment, which has thus received the sanction of compulsory legislation, seems, as we have noticed,[51] to be one of the two most striking features in the modern history of the Cornish system. The 'Penny Magazine' of 1836 states that at one time the contracts were taken for six months, and M. Jars puts the period in his day at four. The 'Penny Magazine' for 1834 says that at that time they were let for two months, and the same journal for 1836 reduces the period then prevalent to a single month. Mr. Laing, however, in 1842 restates it at two months, and so does Mr. Collins in 1875. The evidence given before Lord Kinnaird's commission in 1864 showed[52] that in Dolcoath all the work was then let on contract for *one* or *two* months; while in the lead mines of the north the bargains were sometimes taken for a quarter,[53] sometimes for eight months, and sometimes for a year.[54] Even in Cornwall itself the fact seemed to be that the periods of setting might vary in different mines, for it was also alleged[55] that the tributers sometimes worked for five or six months before they settled their accounts. The periods, too, of balancing the accounts might differ from the periods of letting the contracts; for at some mines in the north it appeared[56] that the bargain might last for a year, but the men might be paid every month; or again,[57] that the contracts might be let for the quarter, and the men receive monthly subsist, while the balance owing to them was paid at the end of the year. In a similar way evidence was given before a committee of the House of Commons in 1887,[58] which tended to show that what the men really desired was frequency of payment rather than frequency of setting the contracts. They objected, indeed, to the 'month in hand,' and urged that the period of arrears might be reduced to a fortnight, if not to a week; and it need not be shown with any detail that the former system gives the adventurers the benefit of interest on the money withheld; for, should a man wish to emigrate and receive at once what is due to him, he has practically, it would seem, to pay interest to another

[51] *Supra*, chapter v.
[52] Q. 8735.
[53] Q. 15473.
[54] Q. 13475-77 and 17374.
[55] Q. 1409.
[56] Q. 17374.
[57] Q. 16184.
[58] S., *passim*.

man, or to the agent, who, like a banker discounting a bill, gives him the present worth of his 'month in hand.' They also desired that the amount of subsist, which should, they urged, be given every alternate fortnight, if not every week, should approximate as closely as might be possible to the actual amount of money they had earned; and the Stannaries Act of 1887 makes provision for this, together with a fortnightly subsist, and a fortnight's arrears.

But with these alterations it seems that they would be content. The monthly contract in fact allows, as one witness urged, for 'an average probability' of good and bad luck; and, although in Cornwall, as we have noticed, the time seems to have been reduced generally to a month—or, as it appears, to two months at the Devon Great Consols Mine—yet in the north of England the bargains seem still to be 'very commonly' made for two or three months, and during recent years apparently a tendency has even been manifested to let contracts for longer periods to 'an intelligent and steady pair.' Sometimes indeed contracts are set irrespective of time. Sometimes too, even in Cornwall, they may last for two or six months, or on the tin streams for one or two years. But sometimes they are taken at 'six feet or the month'—on a 'stent' as it is called—and in these cases they may end even before the month is complete.

There can, then, be little doubt upon the whole that in Cornwall the period of payment has tended in the direction of gradual reduction, and that it may be still further reduced. One witness, even before Lord Kinnaird's commission, argued[59] that 'a more frequent payment would be "very beneficial;"' and another declared—and we shall see the full meaning of this observation later—that he would not 'hesitate' to pay tutwork men once a fortnight. The adoption, again, of the four-weekly month, and the payment of wages thirteen instead of twelve times in the year, seems[60] indeed to have been partly due to the fact that under the old system a calendar month might sometimes mean five instead of four weeks, and might entail upon the men the loss of a week's wages. But the change was also undoubtedly prompted by the consideration that the longer interval of payment implied greater indebtedness to the local shopkeeper; and the attempt made later to re-introduce the old system at the Devon Great Consols mine was met, as we have before noticed, by the unwonted phenomenon of a strike.[61]

[59] *Q.* 10289, and also 9214.
[60] *Cf.* Report of Commission on Housing of Working Classes, *Q.* 8043.
[61] *Supra*, chapter vi.

This gradual diminution of the intervals at which the payment of wages is made is, as we have before[62] remarked, and, as the statement we have just quoted from the report of Lord Kinnaird's commission indicates, connected with the other distinctive feature of recent history in Cornish mining—the encroachment of tutwork on the sphere occupied by tribute. For, on the one hand, it is in the case of tribute that we can most clearly trace this gradual diminution; and on the other it was stated before Lord Kinnaird's commission[63] that the pay was 'not so quick' in tribute as in tutwork.

[62] *Supra*, chapter v.

[63] *Q.* 1406.

CHAPTER VIII.

A Comparison between Tutwork and Tribute.

It is tribute which exhibits most fully the chief advantages and the main drawbacks of the Cornish system. In fact it may almost be said to possess a monopoly of the disadvantages, while it enjoys a preponderance of the benefits. The tributer is more intimately interested than the tut-worker in the prosperity and adversity of the mine, for his earnings depend more directly upon its shifting fortunes. He is, therefore, in a more real sense his own employer; for he receives a payment, which does not vary with the quantity alone of the work he performs, but also with the quality and price of the ore he sends to the surface. He is placed in a more responsible position, and has greater occasion for the exercise of ingenuity and judgment. And so the system of tribute was characterised by Babbage as especially good; and a witness before Lord Kinnaird's commission declared[1] that 'almost every active and clever miner,' if he was 'prudent,' became a 'tributer.'

But there is another aspect of the question to be considered. For the increase of responsibility in an industry so fluctuating and speculative as metallic mining implies increased irregularity of earnings.

The tut-worker, it is true, does not receive the same earnings in every case. They may vary according to the hardness of the ground, as a witness stated[2] before Lord Kinnaird's commission. The price per fathom may fluctuate, for example, between the extreme limits of 7*s.* 6*d.* and that of £30. And in 1873 Mr. Collins maintained[3] that within his own knowledge these dif-

[1] *Q.* 10344. The agents seem to be chiefly chosen from the tributers (*cf.* S., *Q.* 1789 and 1790); and men do not like to cease being tributers (*cf.* S., *Q.* 1786).

[2] *Q.* 3551.

[3] 'Principles of Metal Mining,' p. 41. Killas is the ground in which the metal is found, sometimes called the 'country.'

ferent rates were paid for tutwork:—In sinking shafts in soft 'killas' the men would receive £2 to £3 per cubic fathom near the surface, and £3 to £4 below a depth of twenty fathoms. In 'compact killas' they would earn £4 to £6 near the surface, and £5 to £8 below; and in 'fair blasting ground' they would secure £6 to £20 near the surface and £10 to £30 below. For levels they would receive about one-third less in non-blasting and one-half less in blasting ground; and for stoping they would earn from 2*s.* 6*d.* to 5*s.* or 6*s.* a fathom.

But these various rates are probably calculated to result on the average in equivalent earnings. It is different, however, with comparative earnings from one period to another. Here the wages of the men must fluctuate with variations in the fortunes of the mines, and the conditions of supply and demand in the labour market. A combination might, indeed, succeed for a time in establishing a minimum rate of its own, but the tendency of the public auction must necessarily have been to produce a coincidence between the actual minimum and the lowest competitive rate. The rate, then, must have been directly influenced by the conditions of supply and demand in the Cornish labour market, so far at least as the men have been ready to migrate from one mine to another. As Mr. John Taylor remarks,[4] the 'price of labour' is caused by the Cornish system 'always to bear on the whole a fair proportion to the demand, combined with the considerations connected with the varying expenses of living.'

Sir Charles Lemon, it is true, stated[5] in 1838 that in places only a few miles distant from one another wages might differ widely, and might continue to differ for a long period. And he said that this phenomenon was only to be explained by the 'known fact of the attachment of the Cornish miner to his own home.' He illustrated the point by the following table, showing the average monthly wage in different districts in 1837:—

TABLE XI.

	West of Penzance.			Midland District.			St. Austell.			Average.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
Tributers . . .	2	7	6	3	8	0	2	19	0	2	18	2
Tut-workers . .	2	5	0	2	17	2	2	19	0	2	13	8
Dressing labourers	2	2	0	2	1	0	2	5	0	2	2	8

With this table we may compare another, which is based upon

[4] 'Geological Transactions,' vol. ii, p. 317. [5] *Statistical Journal*, vol. i, p. 73.

figures supplied to Lord Kinnaird's commission some thirty years later:—[6]

TABLE XII.

	Providence.	Huel Margery.	Huel Reeth.	N. Levant.	Average.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Tut-workers .	2 19 3	2 13 4	2 19 10	3 0 9	2 18 3
Tributers . .	3 11 3	3 8 0	3 6 10	3 9 9	3 8 11

Before the commission, again, a witness declared that the men preferred to stay at home rather than migrate, and he added the remark that it was this practice which prevented the equalisation of wages throughout the whole district. This local attachment is said by a writer in the 'Leisure Hour'[7] to have followed the Cornish emigrants even to America, and in Colorado one mine will be frequented by St. Just men, and another by Camborne men, while the men from Redruth and St. Agnes will resort respectively to a third and a fourth.

This feeling, however, merely narrows the area within which the influences of supply and demand are comparatively unfettered; and it may be the case that the extensive emigration of the past twenty years has lessened the *vis inertiae* hindering local migration. The Cornish miner was described by Mr. John Taylor in 1867 before a committee of Parliament as a 'very moveable commodity;' and the reports of the two doctors appointed by Lord Kinnaird's commission might be cited as supplying evidence of not a few cases,[8] where men had worked in the course of their lives, sometimes at two, sometimes at five or six, different mines. On the other hand it must be admitted that so recently as 1884 a witness before the commission on the Housing of the Working Classes declared[9] that the unwillingness to migrate was still a noticeable fact, and that the men 'generally' 'stuck' to a single mine. But the evidence given before the commission was conflicting, for another witness described the miners as a 'very migratory population.' A similar conflict of opinion may be found in the report of a Parliamentary committee of 1887. One witness speaks[10] of the 'habit of the miners constantly to shift, both from Cornwall to and from other counties, and in Cornwall from one mine to another.' But elsewhere he admits[11] that there are 'undoubtedly' 'cases of men in Cornwall,

[6] K., *Q.* 7995.
[7] 1879, pp. 169, &c. *Cf.* K., *Q.* 9172 and 9173.
[8] Appendix B, i and ii.
[9] Report, *Q.* 8119, *cf. contra*, *Q.* 8754.
[10] S., *Q.* 275.
[11] *Q.* 307.

and plenty of cases,' 'where men work for years in the same mine.' Another witness describes[12] the men as 'principally shifting,' but 'not so much,' he adds, 'from one mine to another, as going to America, and going abroad.' 'They go to America,' he remarks, and 'back again in a very short time.' In another place, however, he also states[13] that within the county itself men are 'always coming and going in mines,' and argues that it is this constant migration, which guarantees the fairness of the periodical auction. And yet, despite of these facts, it seems to be still the case that a marked difference of wages exists between east and west Cornwall.[14]

The rate of wages must vary also with the vicissitudes of fortune and the lapse of time. A comparison of the two tables we have just given indicates a general advance in the earnings both of tributers and tut-workers. It is true, indeed, that a witness before Lord Kinnaird's commission declared[15] that the miners 'as a body' were 'badly paid;' and even to-day, although more than twenty years have elapsed since this testimony was given, it might be difficult to controvert the assertion.[16] But average wages were nevertheless higher then than they had been in the past; and, despite of the alternations of adversity and prosperity to which the mining industry is peculiarly subject, it is the fact that a steady advance may be traced in the rate of wages. In 1837 the average monthly earnings of tributers appear to have been, if we may rely on Sir Charles Lemon's table, about £2 18*s.* 2*d.*, but by the time of Lord Kinnaird's commission they had risen to £3 8*s.* 11*d.*, and the wages of the tut-workers exhibit a similar advance between the two periods, from £2 13*s.* 8*d.* to £2 18*s.* 3*d.* In 1876 again, Dr. Foster stated[17] the average wages of tut-workers for the four years 1872–75 as respectively £3 16*s.* 3*d.*, £4 1*s.* 6*d.*, £3 13*s.* 7*d.*, and £3 10*s.*; and, in 1885, Captain Josiah Thomas, addressing the men at Dolcoath, is reported[18] to have put the average monthly wage of his own men at £4 10*s.*

Any unexpected variation, we must also remember, that arises in the nature of the ground after the bargain has once been made will affect—prejudicially or otherwise—the earnings of tut-workmen,[19] and will therefore introduce another element of fluctuation

[12] *Q.* 510. [13] *Q.* 887.
[14] *Q.* 1319 and 4841. [15] *Q.* 3578.
[16] *Cf.* for ten years ago, 'Daily News,' 8th January, 1879.
[17] 'Report of H.M.'s Inspectors of Mines,' 1876.
[18] 'West Briton,' 19th November, 1885. [19] K., p. xxiii.

into their wages beyond those we have already noticed. 'You set a price,' says[20] a witness before Lord Kinnaird's commission, 'according to what you think the men ought to have a fathom, or what they ought to drive in the month.' 'If,' however, he adds, 'they do not work, or the ground proves unfavourable, of course they do not get as much as you calculate upon;' 'but nine times out of ten they do get their £3 or 3 guineas a month.' Pryce, indeed, significantly states that in his day, if the ground turned out badly, the labourers abandoned the tut bargain,[21] and that in some mines a system of forfeits, of which he personally did not approve, had been adopted expressly to meet these contingencies.

Under that intermediate 'kind' of tribute, which we have before described,[22] a similar method of calculation is pursued; and indeed this appears to be also the case under the full form of tribute itself. So far as the knowledge of the captains goes, the contracts are let at a price which results in the average wage of the district. 'The agents go down,' as a witness before Lord Kinnaird's commission described,[23] they 'calculate the number of tons which they think the men can break in a month,' and the worth per ton of the ore thus broken. They then estimate the labour at the rate of £1 per week per man.

And so it may be the case that the following table, which gives some of the different rates of tribute reported in local newspapers[24] in 1885 and 1886, may really indicate an equal average rate of earnings:—

TABLE XIII.

Number of Pitches.	Number of Men.	Price in £.	Standard of Tin.
11	—	11*s.*	
33	58	9*s.* to 13*s.* 4*d.*	£45 per Ton.
10	27	11*s.* to 12*s.*	
6	—	11*s.* to 13*s.* 4*d.*	
12	28	12*s.* 6*d.*	
22	64	6*s.* to 13*s.* 4*d.*	£50 per Ton.

Nor must we overlook this possibility, when we read in the 'Penny Magazine'[25] that the earnings of tributers exhibit such

[20] *Q.* 10106. *Cf.* also *Q.* 19182 and 2451.
[21] Pp. 184-5. This is not unknown now. S., *Q.* 220-22.
[22] *Supra*, chapter v.
[23] *Q.* 2240. S., *Q.* 218 and 871-9.
[24] 'Western Morning News' and 'West Briton.'
[25] 27th December, 1834.

variations that, where the ore is rich, the tribute may be 6*d.* or 1*s.* in the £, while it may amount to 15*s.* or 16*s.* where the ore is comparatively poor.

But, when we have made full allowance for all these facts, we have still to admit that the fluctuations in the earnings of tut-workers are less than those in the earnings of tributers. It is true, indeed, that the tributers may perhaps be said to enjoy in one respect at least an advantage over the tut-workers. Before Lord Kinnaird's commission they were stated[26] by one witness to be more healthy, because they worked in the places which had been more thoroughly ventilated. 'In ninety-nine cases out of a hundred' they were working in ground which had, comparatively speaking, been 'opened up' by means of winzes and levels. 'The air,' remarked another witness,[27] was 'not so bad,' when he was working on tribute, as it was when he was engaged in tutwork. 'The majority' of the tributers, another declared,[28] work under 'good conditions,' 'as far as the air is concerned.' And, lastly, the commissioners themselves report[29] that 'the prospect of gain may induce the tributer to overwork himself; but it is obvious that the occupation of the tut-workman is more unhealthy, as he is more frequently employed where the air is noxious.'

On the other hand, as this quotation shows, and as one witness alleged, the tributers 'overwork themselves.' Indeed there is even some ground for arguing that the tut-workers on the whole enjoy a greater duration of life, because the tributers work harder, are longer underground, and command a more uncertain livelihood.[30] They can, it is true, take their own time for their work;[31] but the complaint commonly raised by trades unionists against piecework—that it presents powerful inducements to the men to overstrain themselves—applies with considerable force to tribute, and is certainly more applicable to it than it is to tutwork. Should a pitch turn out better than was expected when the bargain was struck, the men are naturally eager to make the most of their opportunities. On some occasions they appear to have worked for twelve hours without interruption; and cases have been known where their food and their drink have been taken down to them underground.[32] Nor must it be forgotten that the irregularity of their earnings is likely to exercise some influence on the average duration of life; though it must indeed be admitted on the other hand that one witness stated[33] before Lord Kinnaird's

[26] *Q.* 5358.
[27] *Q.* 1668.
[28] *Q.* 3466.
[29] P. xix.
[30] *Q.* 4508, 4671 and 4676.
[31] *Q.* 8462.
[32] *Q.* 8463–67.
[33] *Q.* 4667.

commission that there was not much difference in length of life between tributers and tut-workers, and that the evidence we have quoted above seems on the whole to incline in favour of the tributers.

It is true, again, that the tributers appear from the tables we have given before[34] to secure higher earnings, and a witness declared[35] before the commission that in any calculation of wages the insertion of the wages of tributers would 'considerably' increase the average wage. It is true also that evidence given before the same commission tended to show that, unlike the tut-workers, they were not always subject to the month's arrears, and that, in some cases, they enjoyed a superiority in the matter of subsist.[36] 'We give no subsist to tut-workers,' declared[37] one witness, but we profess to give it to tributers. Sometimes indeed, it would seem, this allowance of subsist may eventually prove a 'bad debt' for the mine; for the men to whom it has been advanced may, through their own misfortune, or the leniency of the captain, never repay it;[38] and, as a matter of fact, a witness before a Parliamentary committee in 1887 alleged[39] that 'nearly the whole of the debts due to the companies in Devon and Cornwall' arose from the practice of 'giving the men more subsist than they had actually broken ore.'

In most cases, however, it appears that subsist would not be advanced, if the captain thought that the work done by the miner would bring little or nothing into the pockets of the adventurers;[40] and from this point of view it is clear that the tributers may conceivably suffer a disadvantage rather than enjoy an advantage compared with the tut-workers in the matter of subsist. The allowance of subsist, indeed, although it seems to be so common[41] that it may be regarded as the general rule, is yet theoretically dependent upon the opinion of the captain;[42] and in many—if not most—cases, it is apparently only granted on an express application.[43] This is made by the men on pay-days alone, 'except on very special occasions;'[44] and, before a Parliamentary committee in 1887, a miner urged[45] that the men felt some 'repugnance' to making the request, because, as he expressed it,

[34] *Supra*, Tables XI and XII.
[35] *Q.* 2352. *Cf.* S., *Q.* 1172–74, especially copper tributers. *Cf.* *Q.* 370.
[36] *Q.* 9072 and 8810. S., *Q.* 3331, *contra*, 2203.
[37] *Q.* 9072 and 9216. [38] S., *Q.* 39. [39] *Q.* 1259.
[40] *Q.* 422–24, 438, 1991–94, *contra*, *Q.* 1297.
[41] S., *Q.* 235, 1259, and 1642.
[42] S., *Q.* 301, 614, 1991, 2990, 3202, 4108, and 4769.
[43] S., *Q.* 614, 2080, and 4106. [44] S., *Q.* 1642. [45] S., *Q.* 2065.

it was tantamount to 'pleading poverty,' and entailed an unpleasant explanation of their private affairs.[46]

The provision of subsist, together with the existence of a practice by which a tributer could abandon a pitch,[47] if it proved irretrievably bad, throws an important light upon the extent and consequences of the irregularity of his earnings. Cases indeed are recorded,[48] where men have made by a stroke of unusual good luck £900, or more, in two months. Sometimes they may earn £40 or £50 in a month;[49] but sometimes they may earn less than £2, and sometimes the price of tin may be so low that a local newspaper may declare[50] that the tributers 'find that they cannot make a living at all.' 'Should a lode turn out poorer than' was 'expected,' Lord Kinnaird's commissioners remark,[51] 'a tributer will work for weeks and perhaps months without earning anything.' 'The rate of earnings in tribute,' declares[52] Mr. Taylor, is 'extremely uncertain,' and 'the employment is consequently speculative in a great degree.' And Pryce in his turn similarly maintains[53] that the practice of 'breaking by the fathom' is 'productive of more certain wages to the men and larger quantity of ore to the owners.'

It can scarcely be doubted that the irregularity of earnings we have just been discussing has contributed towards the diminution of the number of instances where tribute prevails. But the avoidance of irregularity has hardly been possible without a decrease in responsibility and independence; and this decrease has implied a greater frequency in the payment of wages. The coincidence, therefore, between the decline of tribute and the diminution in the intervals of payment can scarcely be termed accidental; and a more direct connection between the two changes has yet to be emphasised. For the system of tribute, as Mr. Taylor remarks, calls for greater calculation, and requires 'more complicated' accounts. Payment then cannot be made with such rapidity as in tutwork, and the practice of a month's arrear has had in this circumstance at least a plausible basis.

And thus a witness before Lord Kinnaird's commission[54] stated that the tribute accounts took a month to make up, but the tutwork accounts might be finished in half that time; and the

[46] Once it would seem that the amount of subsist was fixed by custom; now it appears to fluctuate (*cf.* S., *Q.* 4104–8).

[47] *Cf.* S., *Q.* 1344. [48] K., *Q.* 10510. [49] Ibid., *Q.* 2354 and 2451.

[50] 'West Briton,' 10th July, 1885. *Cf.* S., *Q.* 2034.

[51] P. xxiii. [52] 'Geological Transactions,' vol. ii, p. 322.

[53] P. 192. [54] *Q.* 7860.

testimony of captains and miners alike before a committee of Parliament in 1887 went far to confirm the statement. An interval, they argued, might indeed be required, even after the tutwork contract had ended, for the place to be surveyed;[55] and it might be the case that some time and labour were needed before the work was satisfactorily completed to the 'true point,' or—in mining phraseology—duly 'squared up.' The levels, for instance, might not be sufficiently wide, or might depart too much from the strict horizontal;[56] and hence, should the periods of settling be made too frequent, both the mine and the miner might lose[57] time in ascertaining and remedying these and similar defects. Nor again, they contended, should it be forgotten that a miner cannot break so much, if the surface is 'smoothed' as he can, if it is 'broken' and rough.[58] This 'smoothing' and 'squaring up,' however, it must be added, was declared[59] by one witness to be an old, and not an existing, practice; and the difficulty, it seems, might possibly be met by a rough measurement of the work,[60] although even here it is true that time would be lost, as, partly for purposes of ventilation, the work of blasting is suspended when the agents go down.

But, however brief be the period needed in tutwork to adjust the accounts, and however minor be the real difficulties in the way of a fortnightly, if not of a weekly, payment, the general tenour of the evidence given before the committee showed that a longer time was required in calculating the earnings of the tributer.[61] In the case of copper mining the necessity was especially marked, for here the ore had first to be sold at the periodical ticketings,[62] and the process of assaying was more difficult and elaborate.[63] But even this obstacle might, it seems, be removed by fixing the price at which the ore is to be considered as selling—as indeed is sometimes done—at the commencement of the contract,[64] or by resting content for the time with a rough calculation[65] and ascertaining and paying the exact balance at a subsequent date.[66] At any rate a period of a fortnight appears[67] to be generally regarded as an adequate interval; and in America—where the tributer is termed[68] a 'scrammer'—the men seem to be paid the whole,[69]

[55] *Q.* 610 and 1983.
[56] *Q.* 237 and 1523.
[57] S., *Q.* 1000.
[58] *Q.* 1248.
[59] *Q.* 2229–31. *Cf.* 2940.
[60] *Q.* 1503–12, and 2164.
[61] *Q.* 414, 1635, 2178, 2611, and 5746.
[62] *Q.* 1171.
[63] *Q.* 1423, 1732, and 2627.
[64] *Q.* 1314 and 3139–41.
[65] *Q.* 2629, 3027, and 3216–7.
[66] *Q.* 5296 and 5297.
[67] *Q.* 412, 1059, and 1634.
[68] *Q.* 2413.
[69] *Q.* 1956, 2504, 2520, and 5431–33.

or nearly the whole, of their earnings with little, if any, delay.

We must not, however, neglect another reason, which may be adduced for the decrease of tribute; and that is the growth of knowledge on the part of the captains. Metallic mining is no longer to the same extent the hap-hazard pursuit of signs and tokens—deceptive or otherwise—that it once was. The days of the divining-rod—or, as it has been termed in Cornwall, the 'dowsing rod'—are over;[70] and mere rule of thumb is being replaced by a body of scientific experience. By dint of long practice the captains are now better able to estimate the probable yield of the various particular portions of the mine. Twenty years ago even, at the time of Lord Kinnaird's commission,[71] it was said that this increased intelligence of the mine agents, and their 'ability in judging of the quality of the lode before striking a bargain,' were causing the instances of unusual and unexpected gain on the part of the tributer to be 'of rare occurrence.' And therefore, if a 'rich lode' were 'discovered,' it was 'frequently worked by tutwork.' This change has since progressed, and appears to be still progressing.

There is no longer the same opening for speculation, and the speculative contracts have diminished in number. The tribute system, it must be remembered, produces on the whole a general coincidence between the interests of the miners and those of the adventurers; but it has also some tendency to make it the temporary interest of the tributer to get the better of the captain in the periodical bargain, and to prevent him from knowing the genuine prospects and real condition of the pitch. At a time, when there was so much of uncertainty and speculation in the probable yield of particular portions of the lode, this object—even in the teeth of established rules—might have been effected with comparative ease, and might on the whole have resulted as often in loss to the miner, as in loss to the adventurers. But, now that the captain has more certain knowledge on which to proceed, he is able to enter into a definite arrangement with greater confidence; and he, like the miner, seems to prefer assured conclusions to uncertain chances, regular returns to irregular gains, and therefore avoids speculation.

[70] Pryce says of it, 'I am well convinced of its absolute and unprovable virtue,' p. 116.

[71] *Cf.* p. xxiii.

CHAPTER IX.

Conclusion.

It is true that there are complaints under the new form of the system, as under the old. The captain may be guilty of short-sighted imprudence. He may attempt to reduce the terms of a bargain with excessive haste,[1] and may thus put an effective premium upon remissness of industry. In his anxiety not to be 'baffled'[2] by the miners, he may engender hostility and distrust. Complaints have been raised also—with or without reason—on the ground that prejudice and partiality have sometimes been shown at the periodical survey. The competition, it has been argued,[3] is not perfectly open, but the agents possess, and sometimes display, a power of excluding a man for some reason or other which may indeed be capable of justification, but may also be prompted by unjustifiable caprice.

The agents, again, it was urged[4] before a committee of Parliament in 1887, sometimes interfere—to the intentional detriment of the men—with the bargains, which they themselves have set. But on the other hand, before the same committee, it was contended[5] that, while it was true that the bargains were 'occasionally interrupted,' this was done for the purpose of averting some special danger which threatened the mine, or of making some necessary change in the direction of the workings. The contracts might indeed be broken for other causes; but here too, in the majority of cases, it was[6] when they were turning out amiss for the men, and not for the contrary reason.

Another complaint made by the tributers seems to rest on a

[1] S., *Q.* 1845, 2098, and 5798.
[2] *Cf.* K., *Q.* 3163 and 3550.
[3] S., *Q.* 3461, 3462, and 5936.
[4] S., *Q.* 3286 and 4127.
[5] S., *Q.* 215, 216, and 4064.
[6] S., *Q.* 462.

more substantial foundation. They have argued[7] that the method hitherto adopted in taking the samples of the ores for the purpose of appraising their value has not allowed them sufficient opportunity of checking the results. Hitherto the usual practice seems[8] to have been for the tin stone, which has been sent to the surface, to be broken to a certain size, and properly mixed. Two or three samples have been taken of the mixture, and one of these has sometimes been given[9] to the men; another has belonged to the adventurers, and a third has been left behind for re-trial, should this be necessary.[10] The sample belonging to the adventurers has been assayed, and the men have of course had the power, which they sometimes have exercised,[11] of assaying their own. Should the two results disagree, the difference may be split, or the third sample tried.[12] But in practice it seems[13] that the sample of the adventurers has often been treated as the standard, and that the presence of the men or of a representative in the assaying room has been stoutly opposed[14] by the captains. The men have therefore resolutely contended that the third sample should be sealed,[15] and greater facilities afforded for checking the process of assaying;[16] and they have so far succeeded that provision has been made for these points in the Stannaries Act of 1887.

The new form of the system, then, so far resembles the old that it is not free from defects or complaints. Nor must we forget that the 'kind of tribute,' which has encroached upon the old and simple form, bears some resemblance at least to that form, and exhibits a speculative element. These tut-workers, as they are called, who now usually stope by the ton, and not, as seems once to have been the case,[17] by the fathom, approximate indeed, as we have noticed,[18] to the ordinary tut-workers, because their earnings depend in the main on the quantity of the 'stuff' they send to the surface, and not so much on its quality or probable price; but they also approximate to the ordinary tributers, because the element of quality does, as we shall see, enter into consideration, and the yield and size[19] of the lode cannot even yet be estimated with the same certainty as the nature of the ground, through which the ordinary tut-workers sink their shafts, or drive their levels.

The two forms, indeed, of ordinary tribute and this special kind of tribute or tutwork may be said now to resemble one another

[7] S., *Q.* 3407.
[8] S., *Q.* 473–90.
[9] S., *Q.* 480.
[10] S., *Q.* 482.
[11] S., *Q.* 484, 1176, 1764, and 4802.
[12] S., *Q.* 489 and 1177.
[13] S., *Q.* 488, 3417, and 4375.
[14] S., *Q.* 497–99.
[15] S., *Q.* 4054 and 4055.
[16] S., *Q.* 2396, 2397, 3275, 3276, 3407, and 4234.
[17] S., *Q.* 5319.
[18] *Supra*, chapter v.
[19] S., *Q.* 5318.

even more closely than we have just indicated. For evidence given before a committee of Parliament in 1887 shows that in the case of the tributer the price, at which the ore is sometimes treated as selling, is the price which prevails, not at the time of the actual sale, but at the time when the contract is taken,[20] or in some cases is an arbitrary price selected by the agent himself.[21] It is, then, for a time a fixed price, and the tributers consequently speculate on the quality of the ore alone, and not on its probable price. The tut-workmen, again, who stope at so much per ton, are not apparently paid entirely by weight; for, unless the stuff that they send to the surface attains a certain standard of quality, it is set on one side, and is not placed to their credit.[22] And thus they too, to a certain extent, like the tributer, speculate on the quality of the ore. In one mine, for example, they have to produce one and a half hundredweight of tin to ten tons of stuff before it is placed to their credit,[23] and strenuous complaints have been raised[24] by some of their number against the practice. It is in part at least for this reason that an urgent request has been preferred for the appointment of an official checkweigher. The men might, it appears, stay on the surface themselves, and see the stuff weighed; and this they have sometimes done.[25] But, like the tributers, who might themselves witness the dressing of the ores,[26] they have lost their wages for the time; and hence it is that a special clause giving the men the power of appointing a checkweigher has been inserted in the recent Stannaries Act.

But, while the new form has thus its analogies to the old, it has also its differences; and, however much we may regret the *comparative* decline of tribute, we cannot refuse to acknowledge the potency of the reasons which have tended to produce this result. In this case, as in so many others, the course of events, and the movement of economic forces, seem to show that regularity of earnings is more important than independence, and that there are abiding elements in the relation of wage-payer to wage-receiver, which may offer a strenuous resistance to all the dissolvent influences of co-operative production.

Other changes of equal, or greater, importance may be impending in the Cornish mines. The formation of an union may lead to the removal of grievances—real or imaginary; but it may also result in the abandonment of the periodical auction. For, despite

[20] S., *Q.* 1314. [21] S., *Q.* 1754-58.
[22] S., *Q.* 242, 243, 449, 895, 1082, 3826, and 4075.
[23] S., *Q.* 2027. Sometimes it is regulated by a sliding scale. *Q.* 5522.
[24] S., *Q.* 4284. [25] S., *Q.* 561 and 1736. [26] S., *Q.* 416 and 4801.

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